

DRAFT ENVIRONMENTAL IMPACT REPORT

PORTUGUESE BEND LANDSLIDE REMEDIATION
CITY OF RANCHO PALOS VERDES
STATE CLEARINGHOUSE NO. 2020110212



LSA

February 2023

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PORTUGUESE BEND LANDSLIDE REMEDIATION CITY OF RANCHO PALOS VERDES STATE CLEARINGHOUSE NO. 2020110212

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- C: BIOLOGICAL RESOURCES ASSESSMENT
- D: CULTURAL RESOURCES SURVEY
- E: GEOTECHNICAL REPORT
- F: HYDROLOGY AND WATER RESOURCES TECHNICAL REPORT
- G: NOISE IMPACT ASSESSMENT
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LIST OF ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
AAQS	ambient air quality standards
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ACLAD	Abalone Cove Landslide Abatement District
af	acre-foot
af/yr	acre-feet per year
ANSI	American National Standards Institute
APA	Administrative Procedure Act
AQMP	Air Quality Management Plan
AVR	average vehicle ridership
BACT	Best Available Control Technology
Basin	South Coast Air Basin
	or
	Los Angeles County Groundwater Basin
BERD	Built Environment Resource Directory
BMP	best management practice
CAA	Clean Air Act
CAAP	Climate Action and Adaptation Plan
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy

CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	Governor's Office of Emergency Services
Cal Water	California Water Service Company
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CALGreen Code	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CC&Rs	covenants, conditions, and restrictions
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
Central Basin	Central Groundwater Basin
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
CGS	California Geological Survey

CH ₄	methane
City	City of Rancho Palos Verdes
<i>Cleveland v. SANDAG</i>	<i>Cleveland National Forest Foundation v. San Diego Association of Governments</i>
CMP	Congestion Management Program
	or
	corrugated metal pipe
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO ₂	carbon dioxide
Commission	California Fish and Game Commission
Construction General Permit	<i>State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ)</i>
County	County of Los Angeles
CREC	Controlled Recognized Environmental Condition
CRHR	California Register of Historical Resources
CSMD	Consolidated Sewer Maintenance District
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel(s)
dba	A-weighted decibel(s)
dba/DD	A-weighted decibels per each doubling of the distance
DCFC	Direct Current Fast Charging

DFSP	Defense Fuel Supply Point
DHS	California Department of Health Services
District	West Basin Municipal Water District
DOC	California Department of Conservation
DOGGR	California Division of Oil, Gas, and Geothermal Resources Regulatory Program
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMS	Emergency Medical Services
EO	Executive Order
EOP	Emergency Operations Plan
ERAP	Emissions Reduction Action Plan
EWMP	Enhanced Watershed Management Program
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FMMP	Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Area
FRAP	Fire and Resources Assessment Program
FTA	Federal Transit Administration
FTA Manual	<i>Transit Noise and Vibration Impact Assessment Manual (FTA 2018)</i>
ERAP	Emissions Reduction Action Plan

GHG	greenhouse gas
GWh	gigawatt-hours
CAT	Climate Action Team
HCP	Habitat Conservation Plan
HDPE	high density polyethylene
HFC	hydrofluorocarbons
HSC	California Health and Safety Code
IA	Implementing Agreement
IEC	International Electrotechnical Commission
IMAC	Infrastructure Management Advisory Committee
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
LACDPW	Los Angeles County Department of Public Works
LACM	Natural History Museum of Los Angeles County
LACOFD	Los Angeles County Fire Department
LADPW	Los Angeles County Department of Public Works (LADPW)
LARWQCB	Los Angeles Water Quality Control Board
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night average level
L _{eq}	equivalent sound level
LOS	level(s) of service
LRA	Local Responsibility Area
LST	localized significance threshold
LST Methodology	<i>Localized Significance Threshold Methodology</i> (SCAQMD 2009)

mgd	million gallons per day
MLD	Most Likely Descendant
mm	millimeter(s)
MMT CO ₂ e	million metric ton(s) of carbon dioxide equivalent
MPD	Master Plan of Drainage
mpg	miles per gallon
MS4	municipal separate storm sewer system
MT	metric ton(s)
MT CO ₂ e	metric ton(s) of carbon dioxide equivalent
MT CO ₂ e/yr	metric tons of carbon dioxide equivalent per year
MW	megawatt(s)
MWD	Metropolitan Water District of Southern California
MWELO	Model Water Efficient Landscape Ordinance
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAGPRA	Native American Grave Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NETR	Nationwide Environmental Title Research
NFM	National Fire Plan
NHD	National Hydrography Dataset
NHMLAC	Natural History Museum of Los Angeles County

NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NIMS	National Incident Management System
NO ₂	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NOT	Notice of Termination
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O ₃	ozone
OHP	Office of Historic Preservation
ONAC	Office of Noise Abatement and Control
ONC	Office of Noise Control
OPR	Governor's Office of Planning and Research
OSH	Open Space Hazard
OSHA	Occupational Safety and Health Administration
OSP	Open Space Preservation
PBL	Portuguese Bend Landslide
PCE	passenger car equivalency
PFC	perfluorocarbons

PFYC	Potential Fossil Yield Classification
Phase I ESA	Phase I Environmental Site Assessment
Phase I ESA Update	Phase I Environmental Site Assessment Update
PM _{2.5}	particulate matter less than 2.5 microns in size
PM ₁₀	particulate matter less than 10 microns in size
PMP	Paleontological Mitigation Plan
ppm	parts per million
ppt	parts per trillion
PPV	peak particle velocity
PRC	Public Resources Code
PRDs	Permit Registration Documents
Preserve	Palos Verdes Nature Preserve
project	Portuguese Bend Landslide Remediation Project
PVB	Palos Verdes blue butterfly
PVHA	Palos Verdes Horsemen's Association
PVPLC	Palos Verdes Peninsula Land Conservancy
RCM	Regulatory Compliance Measure
RCP	Regional Comprehensive Plan
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act of 1976
REC	Recognized Environmental Condition
rms	root-mean-square
ROG	reactive organic gas
RTP	Regional Transportation Plan

RWMP	Recycled Water Master Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SAFE Vehicles Rule	<i>Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks</i>
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
SEMS	Standardized Emergency Management System
sf	square foot/feet
SF ₆	sulfur hexafluoride
SFHA	special flood hazard area
SHMP	California State Hazard Mitigation Plan
SHPO	California State Historic Preservation Officer
Signal Hill Station	Long Beach-Signal Hill Monitoring Station
SIP	State Implementation Plan
SLF	Sacred Lands File
SMARTS	Stormwater Multiple Application and Report Tracking System
SoCalGas	Southern California Gas Company
South Long Beach Station	South Long Beach Monitoring Station

SO _x	sulfur oxides
sq mi	square mile/miles
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Element
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
SUSMP	Standard Urban Stormwater Mitigation Plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TNP	Trails Network Plan
Transportation Assessment	<i>Transportation Assessment Portuguese Bend Landslide Project (LLG 2022)</i>
UMTA	Urban Mass Transit Administration
UNFCCC	United Nations Framework Convention on Climate Change
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	ultraviolet
UWMPA	Urban Water Management Planning Act

UWS	Universal Waste Systems
VdB	vibration decibels
VHFHSZ	very high fire hazard severity zones
Vista	Vista Environmental Consulting
VMT	vehicle miles traveled
VOC	volatile organic compound
WDID	Waste Discharge Identification Number
WEAP	Worker Environmental Awareness Program
West Basin MWD	West Basin Municipal Water District (West Basin MWD)
West Coast Basin	West Coast Groundwater Basin
WMA	Watershed Management Area
WMP	Watershed Management Program
WMS	Watershed Modeling Systems
WPCP	Water Pollution Control Plant
WRD	Water Replenishment District of Southern California
WRP	Wastewater Reclamation Plant
WUI	wildland-urban interface
ZEV	zero-emission vehicle

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that local government agencies, before taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public document designed to provide both the public and local and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making.

This Executive Summary has been prepared according to *State CEQA Guidelines* Section 15123 for the Draft EIR for the proposed Portuguese Bend Landslide Remediation Project (proposed project). This Draft EIR has been prepared for the City of Rancho Palos Verdes (City) to analyze the proposed project's potential impacts on the environment; to propose mitigation measures for identified potentially significant impacts that would minimize, offset, or otherwise reduce or avoid those environmental impacts; and to discuss alternatives that could reduce the potentially significant impacts of the proposed project.

1.2 SUMMARY OF PROJECT DESCRIPTION

1.2.1 Location and Setting

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the Portuguese Bend Landslide (PBL), is the Pacific Ocean. The proposed project consists of approximately 206 acres within the landslide complex (project site). The project site includes approximately 104 acres of land located within the City-owned Palos Verdes Nature Preserve (Preserve), specifically within the Portuguese Bend Reserve and the Abalone Cove Park and Reserve. The habitat manager of the City-owned Preserve is the Palos Verdes Peninsula Land Conservancy (PVPLC), pursuant to the City Council-adopted Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and Management Agreement.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Public trails within the Preserve are located on the eastern side of the project site and on the seaward side of Palos Verdes Drive South. One park, the Abalone Cove Park and Preserve, also contains a State Ecological Preserve.

Due to the land movement, surface fractures (also known as fissures) exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South.

1.2.2 Proposed Project

The proposed project is intended to minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. Thus, the proposed improvements would include infilling surface fractures to reduce the infiltration of surface water into the ground; constructing surface swales and a low flow reduction area (detention basin) to collect, slow, and convey surface water to the ocean; and installing a subsurface water extraction system (hydraugers) by means of horizontal directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass.

Existing surface fractures within the project site are a few feet wide, and some are as deep as 15 or more feet. These fractures collect stormwater runoff that discharges into the ground. The stormwater runoff enters the fractures, where it percolates into the ground and becomes part of the groundwater, which exacerbates landslide movement. The surface fracture infilling will control stormwater runoff infiltrating the ground and will help in solving one aspect of the landslide movement.

The proposed project also includes installing new surface water improvements and refurbishing existing pipes to minimize the soil erosion loss and stormwater ponding and infiltration that contributes to the landslide movement. These surface water improvements and refurbishments consist of the construction of a network of drainage swales utilizing a geofabric liner for replanting that extend south from Burma Road and traverse through the project site, the construction of a flow reduction area that would essentially act as a detention basin that would help manage the flow of excess stormwater runoff, the replacement and refurbishment of existing underground piping that conveys stormwater runoff through the project site, and the installation of hydraugers which would alleviate artesian water pressure below the PBL.

1.2.3 Project Objectives

The City has established the following intended specific objectives, which would aid decision-makers in their review of the project and its associated environmental impacts:

- Identifying geotechnical engineering solutions that are environmentally sensitive, will substantially reduce the risk of damage to public and private property (including residences), and would allow for the significant improvements of roadway and infrastructure, safety, and stability projects;
- Reducing substantial human health risk and improving public safety;
- Reducing the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts to the marine and terrestrial ecosystem;
- Reducing the likelihood of major landslide movement that would damage and render a major arterial street, Palos Verdes Drive South, unusable, potentially leading to major detours, additional vehicle emissions associated with additional miles traveled, major disruptions to

traveling motorists, and loss of productivity throughout the city of Rancho Palos Verdes and its surrounding communities;

- Reducing the likelihood of surface fractures that would damage and fragment sensitive species habitat, thereby enhancing native vegetation in the Preserve;
- Alleviating artesian water pressure below the PBL area, which is believed to be a major contributing factor to landslide movement and controlling major surface water runoffs;
- Reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean that contribute to negative impacts on the coastal and marine environments; and
- Selecting remedy options that are consistent with the natural visual characteristics of the surrounding Preserve.

1.3 SIGNIFICANT UNAVOIDABLE IMPACTS

Implementation of the proposed project would not result in any impacts that are considered significant, adverse, and unavoidable. All environmental issues analyzed in this Draft EIR were determined to result in less than significant impacts, or can be reduced to less than significant levels with the incorporation of mitigation measures.

1.4 ALTERNATIVES

The following alternatives to the proposed project were selected for consideration, including the No Project Alternative as required by CEQA. Refer to Chapter 5.0, Alternatives, for a more detailed explanation regarding the project alternatives outlined below.

1.4.1 Alternative 1: No Project Alternative

Alternative 1, the No Project Alternative, would involve no landslide remediation. No remediation would occur on the project site and the existing condition of the site would not change. The proposed discretionary actions would not be required. Due to the Landslide Moratorium, the project site would remain undeveloped. The PBL complex would continue to move at various rates, displacing the land seaward and continuing to damage utilities.

This alternative would not achieve any of the project objectives including minimizing landslide movement, preserving infrastructure and open lands, preserving natural vegetation and recreational facilities within the Preserve, reducing soil erosion losses, or reducing health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure. This alternative would not satisfy the stated project objectives of identifying geotechnical engineering solutions to minimize landslide movement in the PBL area, improving public safety, protecting private property and related improvements, reducing the likelihood of major landslide movement, alleviating artesian water pressure below the PBL area, or reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean. The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route and key component of the city's circulation network, and would not

reduce the likelihood of a break in the forced sewer main lines that run along Palos Verdes Drive South. Major landslide movement would also increase the likelihood of a wildfire from power lines in this high wildfire severity zone. The No Project Alternative would not reduce the likelihood of surface fractures that would damage and fragment sensitive species habitat, and would not increase the functions and values of drainage features which will be improved in the project condition. The No Project Alternative would not achieve any of the project objectives as discussed in Section 1.2.3, above.

1.4.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative would consist of the elimination of the flow reduction area (detention basin) from the proposed project elements. It would still implement all other elements including surface fracture infilling, drainage swales, replacement and refurbishment of underground pipes, and installation of hydraugers. This alternative would reduce the project footprint by approximately 10 acres because it would remove the flow reduction basin, but the network of drainage swales would remain. By removing the flow reduction area from the proposed project, storm water would not be retained to facilitate a reduced downstream flow similar to existing conditions. Elimination of the flow reduction basin would result in downstream erosion, loss of habitat, potential overtopping of culverts which would hinder traffic circulation, increase in downstream velocity, and disruption to utilities and service systems. The Reduced Project Alternative would be inferior to the proposed project in meeting the project objectives (Refer to Chapter 5.0, Alternatives, for a comparison of the project alternatives and whether they meet the project objectives). Therefore, a Reduced Project Alternative is not possible.

1.4.3 Other Alternatives Considered

Other alternatives that were brought up during Notice of Preparation (NOP) distribution included reducing the number of fissures to be filled and changing the materials used for the filling, eliminating the drainage swales, and changing the hydrauger locations. The material that would be used to fill the fissures has been updated to no longer use fly ash and to instead use a more appropriate material (i.e., bentonite chips and/or soil). Additionally, the design team has conducted a fill survey and determined the appropriate number of fissures to make a meaningful impact on landslide remediation. The design engineers will be consulted prior to the access/infilling of cracks in sensitive areas to evaluate whether the requirement for infilling of these cracks can be deleted. Elimination of the drainage swales was raised as a consideration for reducing the project footprint. Eliminating the swales would lead to continued erosion, which would impact sensitive habitats and reduce the likelihood of an increase in the functions and values of existing water resources, as well as result in water runoff percolation into the ground. As for changes to the hydrauger configuration, the locations of the hydraugers moved several times relative to the original design, and one of the hydrauger batteries was eliminated. The rest of hydraugers were shortened so that they do not penetrate below private residences or extend beyond the City-owned land. These amendments to the hydrauger configuration represent the bare minimums needed to be able to slow the landslide. For the reasons stated above, these other alternatives are not possible.

1.5 AREAS OF CONTROVERSY

Pursuant to *State CEQA Guidelines* Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City or that were raised during the scoping process. An NOP for an EIR was circulated and public comments on the Initial Study were solicited for a period exceeding the required 30-day comment period, starting on November 12, 2020, and ending on January 15, 2021. A scoping meeting was held on December 19, 2020. Areas of concern raised during the NOP process included: (1) concerns from the United States Fish and Wildlife Service/California Department of Fish and Wildlife (USFWS/CDFW), the California Native Plant Society, the Palos Verdes Peninsula Land Conservancy (PVPLC), and members of the general public regarding the impacts that the proposed project would have on the aesthetic value of the Portuguese Bend Reserve (Preserve) area; (2) suggestions for the project to avoid, minimize, and mitigate project-related impacts to biological resources (including coastal sage scrub) and to ensure that the project is consistent with the requirements of the NCCP/HCP; (3) concerns related to erosion control and the loss of topsoil; and (4) concerns raised by the Palos Verdes Horsemen's Association (PVHA), the PVPLC, and the general public regarding recreation and trail accessibility, and maintaining current trail routes to the maximum extent possible.

This Draft EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate potentially significant impacts of the proposed project.

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A identifies the potential environmental impacts, proposed mitigation measures, and level of significance after mitigation is incorporated into the proposed project. Table 1.A also identifies cumulative impacts resulting from the proposed project. Environmental topics addressed in this Draft EIR (Sections 4.1 through 4.16) include aesthetics, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

Refer to Chapter 2.0, Introduction, of this Draft EIR for a discussion of additional effects found not to be significant through the IS/NOP process (e.g., agriculture and forestry resources, mineral resources, population and housing, and public services).

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.1: AESTHETICS		
<p>Threshold 4.1.1: Have a substantial adverse effect on a scenic vista?</p> <p>Less Than Significant Impact. Construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area. Further, the proposed landslide remediation is consistent with all applicable General Plan goals and policies governing aesthetics and scenic quality. The proposed project would also be consistent with all applicable zoning regulations governing aesthetics and scenic quality on the property.</p>	No mitigation is required.	Less Than Significant Impact.
<p>Cumulative Aesthetic Impacts.</p> <p>Less Than Significant Impact. Implementation of the proposed project would not result in a significant cumulative impact related to aesthetics. Additionally, construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area.</p> <p>The cumulative impact area for aesthetic resources related to the proposed project is the city of Rancho Palos Verdes. Given the minimal number of cumulative projects with units dispersed at various locations in the city, cumulative impacts would be negligible. Furthermore, each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing aesthetics. Implementation of the proposed project would not result in a significant cumulative impact related to aesthetics.</p>	No mitigation is required.	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
4.2: AIR QUALITY		
<p>Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?</p> <p>Less Than Significant Impact. The proposed project would not conflict with or obstruct implementation of the 2016 Air Quality Management Plan (AQMP) because (1) the project’s construction emissions would not exceed the South Coast Air Quality Management District’s (SCAQMD) regional significance thresholds, and (2) the proposed project is consistent with the current General Plan land use designations on the project site and would not exceed the growth assumptions in the AQMP. Therefore, impacts related to the conflict with or obstruction of implementation of the applicable air quality plan would be less than significant, and no mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.2.2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?</p> <p>Less Than Significant Impact. Because the proposed project is limited to landslide remediation activities which are considered as construction activity types, no operational emissions would be created from the proposed project. Construction-related emissions are temporary and short term. The proposed project would not exceed the SCAQMD construction emissions thresholds, and short-term air quality impacts would be less than significant.</p>	<p>No mitigation is required.</p> <p>Regulatory Compliance Measure RCM-AQ-1, South Coast Air Quality Management District (SCAQMD) Rule 402, Nuisance. Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. The proposed project would comply with Rule 402 during project construction and operation by minimizing the sources for air contaminants that would endanger the public. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.</p> <p>Regulatory Compliance Measure RCM-AQ-2, South Coast Air Quality Management District (SCAQMD) Rule 403, Fugitive Dust. The Project Applicant shall ensure the</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>construction contractor implements fugitive dust control measures in compliance with SCAQMD Rule 403. The Project Applicant shall include the following fugitive dust control measures for SCAQMD Rule 403 compliance in the project plans and specifications:</p> <ol style="list-style-type: none"> 1. All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions. 2. The construction contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project site are watered, with complete coverage of disturbed areas, at least three (3) times daily during dry weather and preferably mid-morning, afternoon, and after work is done for the day. 3. The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 10 mph or less. <p>Regulatory Compliance Measure RCM-AQ-3, SCAQMD Rule 1113. The Project Applicant shall ensure the construction contractor implements measures to control volatile organic compound (VOC) emissions from architectural coatings in compliance with SCAQMD Rule 1113. The Project Applicant shall include the following control measures for SCAQMD Rule 1113 compliance in the project plans and specifications:</p> <ol style="list-style-type: none"> 1. Only “Low-Volatile Organic Compounds” paints (no more than 50 grams/liter of VOC) shall be used. 	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations?</p> <p>Less Than Significant Impact. Although construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from on-site construction equipment, the proposed project would not exceed the Localized Significance Thresholds (LSTs) for construction emissions. Therefore, impacts from localized construction-related emissions would be less than significant.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?</p> <p>Less Than Significant Impact. Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as SCAQMD Rule 1113 that limits the volatile organic compounds (VOC) content in solvents and Rule 1108 that limits VOC content in asphalt would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site’s boundaries. Through compliance with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur, and no mitigation would be required.</p>	<p>Regulatory Compliance Measure RCM-AQ-1, South Coast Air Quality Management District (SCAQMD) Rule 402, Nuisance. Prohibits the discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Cumulative Air Quality Impacts. Less Than Significant Impact. The incremental effects of projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable per SCAQMD guidelines. The proposed project’s construction- and operation-related regional daily emissions are less than the SCAQMD’s significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations on a project-by-project basis would substantially reduce potential impacts associated with the related projects and the South Coast Air Basin-wide air pollutant emissions. Therefore, the proposed project would not have a cumulatively considerable increase in emissions, and the proposed project’s air quality impacts would be less than cumulatively significant.</p>	<p>No mitigation is required. Refer to Regulatory Compliance Measures AQ-1 through AQ-3 above.</p>	<p>Less Than Significant Impact.</p>
<p>4.3: BIOLOGICAL RESOURCES</p>		
<p>Threshold 4.3.1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? Less Than Significant with Mitigation Incorporated. The Biological Survey Area is within the Frontal Santa Monica Bay-San Pedro Bay Watershed, within an area of the Preserve that contains potential habitat for several regional special-status species. Due to this, the project could indirectly affect special-status plant and wildlife species through the attraction of predators and increased levels of noise, vibration, lighting, and dust during construction activities. There is also a potential for temporary indirect effects to water quality during construction, which could lead to habitat degradation. However, implementation of Regulatory Compliance Measures BIO-1 through BIO-3 and Mitigation Measures MM-BIO-1 through MM-BIO-6 would effectively mitigate potential impacts on special-status wildlife plant and animal species to less than significant levels.</p>	<p>Regulatory Compliance Measure RCM-BIO-1, Compliance with the City of Rancho Palos Verdes’ (City) Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP). As required by Section 17.70.025, Natural Communities Conservation Plan/Habitat Conservation Plan Compliance, of the Rancho Palos Verdes Municipal Code, which requires discretionary approval within the city be approved without the city making a determination of conformance to the NCCP/HCP. Conformance will be demonstrated if the impact is associated with a covered project or activity defined in the NCCP/HCP, and all relevant avoidance and minimization measures are included per Sections 5.5 and 5.6 of the City’s NCCP/HCP. A City qualified biologist used for the implementation of this NCCP/HCP, including implementing these measures, will be subject to the Wildlife Agencies’ review and approval. The City will submit the biologist’s name, address, telephone number, résumé, and three references (i.e., the names and contact information of people familiar with the relevant qualifications of the proposed biologist) at least 10 working</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>days prior to initiating work. If the Wildlife Agencies do not respond within this 10-day period, the City will assume that the biologists are approved.</p> <p>Regulatory Compliance Measure RCM-BIO-2, Compliance with the City’s Overlay Control District Regulations. Due to the project’s land classification within the OC-1 and OC-3 districts, the proposed project must comply with the “Performance Criteria” outlined in Section 17.40.040, Natural Overlay Control District (OC-1) and Regulations, and Section 17.40.060, Urban Appearance Overlay Control District (OC-3) and Regulations, of the Rancho Palos Verdes Municipal Code. The “performance criteria” from these sections include project-related regulations such as, but not limited to, not covering or altering the land surface configuration by moving earth on more than 10 percent of the total land area of the portion of the parcel within the district; not filling, draining, or altering the shape or quality of any water body, spring, or related natural spreading area of greater than 1 acre; not removing vegetation within a designated wildlife habitat area; and not creating site plans or building or other improvement designs that would result in other significant changes to the natural topography or that would prevent or hinder the use of naturalized minimum grading techniques to restore an area to its natural contours.</p> <p>Regulatory Compliance Measure RCM-BIO-3, Compliance with the City’s Coastal Sage Scrub (CSS) Conservation and Management Regulations. Since CSS habitat is located within the project area, the project is subject to the policies, regulations, and standards outlined in Section 17.41, Coastal Sage Scrub Conservation and Management, of the Rancho Palos Verdes Municipal Code. These policies establish a regulatory process for approval of weed</p>	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>abatement and other activities undertaken on properties that are greater than 2 acres in size and contain CSS habitat to ensure that such activity does not jeopardize the continued viability of any endangered or threatened species due to the removal of, or impact to, occupied habitat.</p> <p>Mitigation Measure MM-BIO-1, Focused Plant Survey. Prior to construction, a focused plant survey should be conducted within the final project work areas for the following species: aphanisma, Brand’s star phacelia, Coulter’s saltbush, mesa horkelia, Parish’s brittle scale, Santa Catalina Island desert-thorn, and south coast saltscale. Surveys should be conducted in May/June to capture the appropriate blooming periods for these species. If an existing population will be impacted by covered projects/activities, the project applicant will engage the Palos Verdes Peninsula Land Conservancy (PVPLC), the City’s Palos Verdes Nature Preserve (Preserve) Habitat Manager, and work with the Wildlife Agencies to prepare and implement a habitat restoration plan in accordance with the habitat restoration plan guidelines in Section 7.5 of the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), to be approved by the City and Wildlife Agencies, that will ensure no net loss of listed species within the population. If listed special-status plant species are found, the compensatory mitigation plan must also be approved by the United States Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Wildlife (CDFW), as applicable.</p> <p>Mitigation Measure MM-BIO-2, Pre-Construction Nesting Bird Surveys. If vegetation removal, construction, or grading activities are planned to occur within California gnatcatcher habitat during its breeding season (February 15–August 31), a pre-construction survey will be conducted to determine</p>	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>nesting activity. The Community Development Director, or designee, shall confirm that the City has retained a qualified biologist (USFWS and CDFW will be provided a 10-day period to approve the proposed biologist; if no response from USFWS and CDFW is received within 10 days, approval will be waived), who shall conduct a pre-construction nesting bird survey no more than 3 days prior to the start of such activities. Survey results will be submitted to the Wildlife Agencies for review and approval. If comments are not received in 10 days, the approval requirement will be waived. If nesting activity is detected, all construction activity must occur outside of a 300-foot buffer surrounding each nest. Reductions in the nest buffer may be possible depending on site-specific factors, in coordination with the Wildlife Agencies. The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.</p> <p>Mitigation Measure MM-BIO-3, Worker Environmental Awareness Program (WEAP) Training. Prior to commencing construction, the City’s Community Development Director, or designee, shall confirm that a Worker Environmental Awareness Program training shall be conducted by the City-approved qualified biologist to include the following: (1) the potential presence of covered species and their habitats, (2) the requirements and boundaries of the project, (3) the importance of complying with avoidance and minimization measures, (4) environmentally responsible construction practices, (5) identification of sensitive resource areas in the field, and (6) problem reporting and resolution methods. Training construction crews on special-status species identification and applicable standards and regulations</p>	

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	<p>would help avoid impacts to special-status species that are known to occur in habitats adjacent to the Project Site by identifying those areas where special-status species have potential to be present and specifying procedures that would be implemented to avoid impacts to such species. This training is intended educate all construction personnel on the relevant federal, State, and local laws related to regional special-status species known to occur in adjacent habitat types, particularly habitat associated with the Preserve. The training session shall include training on identification of species that may be found on or adjacent to the Project Site, the status of those species, and any legal protection afforded to those species. Measures that are being implemented to protect those species shall also be explained. Personnel shall be advised to report any special-status species promptly to the construction manager.</p> <p>Mitigation Measure MM-BIO-4, Construction Site Housekeeping. Impacts to habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities shall be minimized by adhering to the following avoidance and minimization measures, in accordance with the City’s NCCP/HCP for the duration of construction activities:</p> <ul style="list-style-type: none"> ● Construction staging areas will be located at least 15 meters (50 feet) away from the Preserve boundary and natural drainages. No-fueling zones will extend a minimum distance of 15 meters (50 feet) from all drainages and away from the Preserve boundary. ● Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction. 	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ● Project-related vehicles shall observe a daytime speed limit of 10 miles per hour (mph) throughout the project site, except on County roads and State and federal highways. Nighttime construction is not permitted unless the City Manager determines that nighttime work is necessary to address public health and safety concerns. Off-road traffic outside of designated project sites shall be prohibited. ● To prevent inadvertent entrapment of animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. ● For the duration of construction activities, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least daily from the construction site. ● Pets, such as dogs or cats, shall not be permitted on the Project Site during construction to prevent harassment, injury, or death of wildlife in the project vicinity. ● Use of rodenticides and herbicides on project sites shall be restricted to prevent primary or secondary poisoning of predators and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the United States Environmental Protection Agency, the 	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>California Department of Food and Agriculture, and other State and federal legislation.</p> <p>Mitigation Measure MM-BIO-5, Erosion Control and Amphibian Exclusionary Fencing. Grading and construction resulting in ground disturbance shall occur within the typical dry season (April 15–October 15), as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. Prior to commencing construction, the City’s Community Development Director, or designee, shall verify that project plans require the project contractor to install adequate erosion and sedimentation barriers (e.g., silt fencing, as described below) prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. This silt fencing shall also serve as a temporary barrier to further minimize the potential for special-status amphibians and other wildlife to enter work areas during construction. The barriers shall consist of 3-foot-tall silt fencing buried to a depth of at least 6 inches below the soil surface along the outer limits of all work areas (or as otherwise required by the stormwater pollution and prevention plan (Stormwater Pollution Prevention Plan [SWPPP] and best management practices [BMPs])). These barriers shall be inspected daily by construction personnel and maintained and repaired as necessary for the duration of construction to ensure they are functional and are not a hazard to wildlife on the outer side of the fence. A City approved qualified biologist shall monitor all fence installation. All barriers shall be removed following completion of construction.</p> <p>Mitigation Measure MM-BIO-6, Defining Construction Staging Areas and Regulating Access to the Preserve. During construction, it is required that the construction</p>	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>footprint be clearly defined with flagging and/or fencing, which will be removed upon completion. Additionally, when accessing the Preserve, authorized vehicle operators shall take measures to avoid and minimize, to the maximum extent possible, environmental damage, including damage to habitat and covered species. Existing Preserve roads or trails that accommodate authorized vehicles in the Preserve should be used wherever practical while minimizing authorized vehicle trips overall within the Preserve. Any unavoidable access routes outside existing trails that can accommodate authorized vehicles or construction areas should be clearly marked. Any new recreational trails, trails that can accommodate authorized vehicles, and utility corridors will be located in areas that avoid/minimize impacts to covered species, habitat fragmentation, and edge effects. The width of construction corridors and easements shall be reviewed and approved by the City prior to use, and said footprint shall be minimized to the maximum extent possible.</p> <p>Mitigation Measure MM-BIO-7, Coastal Sage Scrub (CSS) Restoration Program. In order to ensure the best effort to minimize any potential impacts to the CSS habitat present in the project area, the City shall retain a qualified biologist to develop a project-specific restoration program for CSS and Saltbush Scrub according to the guidelines provided in Section 7.5 of the NCCP/HCP. The restoration plan shall also address the native planting to occur within the swales and low-flow reduction area. Both project components will be lined with geofabric conducive to planting of native material. Prior to selecting appropriate planting material, the City will consult with the PVPLC regarding the native plant mix and source for obtaining native plants and seeds. Temporary impacts to native vegetation will be restored</p>	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction.</p> <p>Mitigation Measure MM-BIO-9, Retaining a Qualified Biologist. Prior to commencing construction, the City shall retain the services of a qualified biologist. The USFWS and CDFW will be provided a 10-day period to approve the proposed biologist. If no response from USFWS and CDFW is received within 10 days, approval will be waived. The Project Biologist shall monitor all project-related ground-disturbing construction activities and assist the City with implementation of all biological resource mitigation measures.</p>	
<p>Threshold 4.3.2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?</p> <p>Less Than Significant with Mitigation Incorporated. A total of three ephemeral (upland vegetated) drainages were delineated within the Biological Survey Area. In addition, upland vegetated swales, existing corrugated metal pipes (CMPs), culverts, and the proposed swale feature were also delineated. Further, the native coastal sage scrub (CSS) vegetation communities within the project site are covered under the NCCP/HCP and are therefore considered to be sensitive natural communities. Approximately 4.50 acres of Saltbush Scrub and 1.84 acres of Undifferentiated CSS, for a total of 6.34 acres of permanent impacts, will require mitigation. As part of Mitigation Measure MM-BIO-7, a project-specific restoration program will be prepared for CSS and Saltbush Scrub according to the guidelines provided in Section 7.5 of the NCCP/HCP. Mitigation Measures MM-BIO-3, MM-BIO-5, and MM-BIO-6 are intended to mitigate impacts within the Preserve during project construction and operation and ensure that applicable NCCP/HCP provisions are</p>	<p>Refer to Mitigation Measures MM-BIO-3, MM-BIO-5, and MM-BIO-6, above.</p> <p>Mitigation Measure MM-BIO-7, Coastal Sage Scrub (CSS) Restoration Program. In order to ensure the best effort to minimize any potential impacts to the CSS habitat present in the project area, the City shall retain a qualified biologist to develop a project-specific restoration program for CSS and Saltbush Scrub according to the guidelines provided in Section 7.5 of the NCCP/HCP. The restoration plan shall also address the native planting to occur within the swales and low-flow reduction area. Both project components will be lined with geofabric conducive to planting of native material. Prior to selecting appropriate planting material, the City will consult with the PVPLC regarding the native plant mix and source for obtaining native plants and seeds. Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction.</p>	<p>Less Than Significant Impact.</p>

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<p>implemented. Therefore, with implementation of Mitigation Measures MM-BIO-3, MM-BIO-5, MM-BIO-6, and MM-BIO-7, impacts to sensitive native habitats would be less than significant.</p>		
<p>Threshold 4.3.3: Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p> <p>Less Than Significant with Mitigation Incorporated. Overall, the proposed project features that will be implemented at the project site will assist with stabilization of slopes and drainages, along with conversion of pipe culverts to open swales. This will ultimately benefit the native habitats in the area, which are being disrupted by the landslide and associated alteration of drainages, erosion, and more. Although construction activities have the potential to result in temporary indirect effects to water quality, these potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of best management practices (BMPs), project design features, and preparation of a Water Quality Management Plan (WQMP). Mitigation Measure MM-BIO-5 requires grading and construction resulting in ground disturbance to occur within the typical dry season, as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. Therefore, with implementation of Mitigation Measure MM-BIO-5, impacts on State or federally protected wetlands would be less than significant.</p>	<p>Refer to Mitigation Measure MM-BIO-5, above.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.3.4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?</p> <p>Less Than Significant with Mitigation Incorporated. There are no designated wildlife corridors or wildlife nurseries on the project site where landslide remediation and associated drainage improvements are proposed. Given the isolated and disturbed</p>	<p>Refer to Mitigation Measure MM-BIO-2, above.</p> <p>Mitigation Measure MM-BIO-8, Pre-Construction Palos Verdes Blue Butterfly Surveys. If vegetation removal, construction, or grading activities are planned to occur within the flight season of the Palos Verdes blue butterfly (PVB) (late January through early May), a pre-construction survey will be conducted to determine the presence of any PVB host plants in all suitable habitat within the proposed</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>nature of the project site, it is unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations. Further, the project would not place any permanent barriers to wildlife movement within any corridors, nor would it permanently disrupt or impede the movement of any wildlife species within the project area. The proposed project has the potential to impact active native bird nests if construction or demolition activities occur during the nesting season and the flight season of the Palos Verdes Blue Butterfly (PVB). Mitigation Measure MM-BIO-2 requires a qualified biologist to conduct preconstruction surveys for the California gnatcatcher if construction occurs within its breeding season. Mitigation Measure MM-BIO-8 will require preconstruction surveys for the PVB host plant in all suitable habitat within the proposed project impact areas. Therefore, impacts to the movement of any native resident or migratory fish or wildlife species and wildlife corridors would be less than significant with the implementation of mitigation.</p>	<p>project impact areas. If host plants are identified, a 5-foot buffer around the host plants will be avoided if feasible. If avoidance of host plants is not feasible, focused PVB surveys will be conducted. If PVB is discovered during surveys, the PVPLC, in coordination with the Wildlife Agencies, will be provided the opportunity to relocate any and all larvae, pupae, or adults. Occupied PVB host plants will be avoided when possible. Occupied habitat will be defined as host plants, including a 5-foot buffer, within a 50-foot buffer around any PVB observation.</p>	
<p>Threshold 4.3.5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Less Than Significant Impact. The project area contains CSS habitat and is therefore subject to the policies, regulations, and standards outlined in Section 17.41, Coastal Sage Scrub Conservation and Management Ordinance, of the City’s Municipal Code. The City will be amending its existing Coastal Sage Scrub Conservation and Management Ordinance to ensure that the provisions of this NCCP/HCP are incorporated into said ordinance. Therefore, impacts to applicable local policies or ordinances protecting biological resources within the Preserve would be less than significant, and no mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>Threshold 4.3.6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?</p> <p>Less Than Significant Impact. The proposed project is consistent with the existing General Plan land use designations currently designated on the project site, and no General Plan Amendment would be required for project implementation. The Biological Survey Area is located within the designated boundaries of the NCCP/HCP. Based on the Coastal Sage Scrub Conservation and Management Ordinance, the City will be amending its existing Coastal Sage Scrub Conservation and Management Ordinance (Municipal Code Chapter 17.41 et seq.) to ensure that the provisions of this NCCP/HCP are incorporated into said ordinance. In accordance with the Landslide Abatement Measures (Section 5.2.3 of the NCCP/HCP), areas of temporary CSS disturbance will be revegetated with CSS habitat within 60 days after completion of abatement activities. A plan for revegetation of CSS habitat in areas of temporary CSS disturbance will be completed as part of the planning stage of landslide abatement measures. Therefore, project impacts related to conflicts with local ordinances or the adopted NCCP/HCP, or with other approved local, regional, or State HCPs, would be less than significant, and no mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Cumulative Biological Resources Impacts.</p> <p>Less Than Significant Impact. The cumulative impact area for biological resources related to the proposed project is the City of Rancho Palos Verdes. Several residential and a few commercial development projects (remodels) are approved and/or pending within the City. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing recreational resources and would be reviewed for consistency with the NCCP/HCP, General Plan goals and policies, and Zoning Code</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>development standards applicable to each site. Implementation of the proposed project would not result in a significant cumulative impact related to biological resources. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to biological resources. Mitigation measures have been added to alleviate any long-term impacts. With compliance with these mitigation measures and regulations, impacts related to biological resources would be less than cumulatively significant.</p>		
<p>4.4: CULTURAL RESOURCES</p>		
<p>Threshold 4.4.1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of CEQA?</p> <p>No Impact. Based on the results of the records search and field survey, three previously recorded cultural resource sites have been identified within or adjacent to the project site. None of these sites were determined to be on or eligible for listing in the California Register of Historical Resources (CRHR), and they are not historical resources pursuant to Section 15064.5 of the State CEQA Guidelines. Therefore, the project would result in no impact to historical resources pursuant to Section 15064.5 of the State CEQA Guidelines.</p>	<p>No mitigation is required.</p>	<p>No impact.</p>
<p>Threshold 4.4.2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA?</p> <p>Less Than Significant with Mitigation Incorporated. The Cultural Resource Assessment prepared for the proposed project identified two archaeological resources on the project site and one resource adjacent to the project site, based on the results of the record search and field survey. The project design includes the conversion of the primary staging area to a surface water run-off retention area after its utilization as a staging area. Although the entire primary staging area was accessible for survey, the ground surface visibility</p>	<p>Regulatory Compliance Measure RCM-CUL-1. In the event that human remains are discovered during ground-disturbing activities, the proposed project would be subject to California Health and Safety Code (HSC) 7050.5, California Environmental Quality Act (CEQA) Section 15064.5, and California Public Resources Code (PRC) Section 5097.98. If human remains are found during ground-disturbing activities, HSC Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>was impeded by dense vegetation. Due to limited visibility, proposed ground disturbance associated with the project feature, and the potential to discover unknown resources, there remains a potential that resources could be present and encountered during ground-disturbing activity. With implementation of Regulatory Compliance Measure RCM-CUL-1 and Mitigation Measures MM-CUL-1, MM-CUL-2, MM-CUL-3, MM-CUL-4, and MM-CUL-5, potential impacts to archaeological resources would be reduced to less than significant levels.</p>	<p>of human remains, the County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials (NPS 1983).</p> <p>Mitigation Measure MM-CUL-1, Retaining a Qualified Archaeologist. Prior to commencing construction, the City of Rancho Palos Verdes (City) shall retain the services of a Qualified Archaeologist meeting the Secretary of the Interior’s Standards. During project-related ground-disturbing construction activities all initial ground-disturbing work shall be monitored by the City’s Archeologist (i.e., an Archaeological Resources Monitor) proficient in artifact and feature identification in monitoring contexts.</p> <p>Mitigation Measure MM-CUL-2, Worker Environmental Awareness Program (WEAP). Prior to commencing construction activities (and thus prior to any ground disturbance on the proposed project site), the City’s Qualified Archaeologist shall conduct initial Worker Environmental Awareness Program (WEAP) training of all construction personnel, including supervisors, present at the outset of the project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the Qualified Archaeologist to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related</p>	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>injury or harm. This training may be performed periodically, such as for new personnel coming on to the project as needed.</p> <p>Mitigation Measure MM-CUL-3, Monitoring During Ground-Disturbing Activities. Prior to commencing construction, the Project Contractor shall provide the City's Qualified Archaeologist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours' notice will be provided to the consultant prior to commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation. The Qualified Archaeologist shall be present on site at the commencement of ground-disturbing activities related to the project. The Qualified Archaeologist shall observe initial ground-disturbing activities and, if determined appropriate, adjust the number of monitors as needed to provide adequate observation and oversight. The Qualified Archaeologist will have stop-work authority to allow for recordation and evaluation of finds during construction. The Qualified Archaeologist will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the project.</p> <p>The City's Qualified Archaeologist, Project Contractor, and subcontractors, and the City shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance in order to provide appropriate oversight.</p> <p>Mitigation Measure MM-CUL-4, Discovery of Previously Unidentified Archaeological Materials. In the event of the discovery of previously unidentified archaeological materials, the Project Contractor shall immediately cease all work activities within an area of no less than 50 feet of the</p>	

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	<p>discovery. After cessation of excavation, the Project Contractor shall immediately contact the City. The discovery of any cultural resource within the project area shall not be grounds for a project-wide “stop-work” notice or otherwise interfere with the project’s continuation except as set forth in this paragraph. In the event of an unanticipated discovery of archaeological materials during construction, the City’s Qualified Archaeologist shall evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and cannot be avoided, the City shall implement an archaeological data recovery program.</p> <p>Mitigation Measure MM-CUL-5, Archaeological Resources Monitoring Report. Withing 60 days of the completion of all ground-disturbing activities, the City’s Archaeologist, serving as the City’s Archaeological Monitor, shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the South Central Coastal Information Center (SCCIC), as required.</p>	
<p>Threshold 4.4.3: Would the project disturb any human remains, including those interred outside of formal cemeteries?</p> <p>Less Than Significant Impact. As a result of the Assembly Bill (AB) 52 consultation letters sent on behalf of the City, the Gabrielino Tongva Indians of California Tribal Council responded on August 13, 2020, with a request to engage in formal consultation with the City. As indicated in Regulatory Compliance Measure RCM-CUL-1, in the event that human remains are discovered during ground-disturbing activities, the proposed project would be subject to State Health</p>	<p>Refer to Regulatory Compliance Measure RCM-CUL-1, above.</p>	<p>Less Than Significant Impact.</p>

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<p>and Safety Code (HSC) 7050.5, State CEQA Guidelines Section 15064.5, and Public Resources Code (PRC) Section 5097.98. Implementation of Regulatory Compliance Measure RCM-CUL-1 would ensure that any potential impacts to unknown buried human remains would be less than significant.</p>		
<p>Cumulative Cultural Resources Impacts. Less Than Significant with Mitigation Incorporated. Potential impacts of the proposed project to unknown cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in Rancho Palos Verdes, could contribute to a cumulatively significant impact due to the overall loss of archaeological artifacts and cultural remains unique to the region. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to archaeological resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant. Implementation of Regulatory Compliance Measure RCM-CUL-1 and Mitigation Measures MM-CUL-1 through MM-CUL-5 would ensure that the proposed project, together with cumulative projects, would not result in a significant cumulative impact to unique archaeological resources and previously undiscovered buried human remains.</p>	<p>Refer to Mitigation Measures MM-CUL-1 through MM-CUL-5 and Regulatory Compliance Measure RCM-CUL-1, above.</p>	<p>Less Than Significant Impact.</p>
<p>4.5: ENERGY</p>		
<p>Threshold 4.5.1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? Less Than Significant Impact. Construction. During construction, the proposed project would consume electricity and petroleum fuel. Electricity demand would be temporary and nominal and would</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>cease upon the completion of construction. Overall, construction activities associated with the proposed project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Construction of the proposed project would consume 5,027 gallons of gasoline and 110,538 gallons of diesel fuel. The construction-related petroleum use would be nominal when compared to current countywide petroleum usage rates. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant.</p> <p>Operation. The hydrauger operation, including filling of the tanks and tank discharge, will be gravity fed and discharged, however, emergency pumps on the project site would be gasoline powered tanks. The emergency pump use would be minimal and would not substantially impact energy resources. The proposed project is limited to landslide remediation activities, which are considered construction activity types; as such, no operational energy use would occur from the proposed project.</p>		
<p>Threshold 4.5.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?</p> <p>Less Than Significant Impact. The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The proposed project would be consistent with all applicable energy-related policies from the Circulation Element of the City’s General Plan. Therefore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Impacts would be less than significant, and no mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Cumulative Energy Impacts.</p> <p>Less Than Significant Impact. The proposed project would result in an increased services demand for electricity and petroleum during construction. Although the proposed project would result in a net</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>increase in electricity use, this increase would not require Southern California Edison (SCE) to expand or construct infrastructure that could cause substantial environmental impacts. Similarly, additional natural gas infrastructure is not required to accommodate cumulative development because the proposed project would not utilize natural gas as an energy source. It is anticipated that Southern California Gas Company (SoCalGas) would be able to meet the natural gas demand of the related projects without additional facilities. Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and the total number of vehicle trips and vehicle miles traveled (VMT) throughout Los Angeles County and the region. Therefore, the proposed project’s contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.</p>		
<p>4.6: GEOLOGY AND SOILS</p>		
<p>Threshold 4.6.1.iv: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?</p> <p>Less Than Significant Impact. The proposed project would minimize landslide movement in the PBL area by implementing a series of geotechnical engineering solutions to relieve artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. These improvements include the infilling of existing surface fractures, which would minimize direct uncontrolled stormwater infiltration; installing new surface water improvements; and refurbishing existing pipes to minimize soil erosion loss and stormwater ponding and infiltration. The objective of implementing these solutions would be to reduce substantial human health risks and improve public safety, reduce the likelihood of major landslide movement that would potentially damage and render Palos Verdes Drive South unusable, and alleviate artesian</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>water pressure below the Portuguese Bend Landslide (PBL) area, a major contributing factor to landslide movement.</p>		
<p>Threshold 4.6.2: Would the project result in substantial soil erosion or the loss of topsoil?</p> <p>Less Than Significant Impact. During grading and construction, soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions due to soil disturbance and the exposure of substantial amounts of soil to weather conditions (e.g., wind, rain). During a storm event, soil erosion could occur at an accelerated rate. The project is subject to the requirements of the State Water Resource Control Board’s (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit, which required preparation of a Storm Water Pollution Prevention Plan (SWPPP) and implementation of construction BMPs. The construction contractor would be required to prepare and implement the SWPPP and associated BMPs in compliance with the Construction General Permit (CGP) during grading and construction, as outlined in Regulatory Compliance Measure RCM-WQ-1. Additionally, the preparation and implementation of an Erosion Control Plan, as articulated in Regulatory Compliance Measure RCM-WQ-2, would require the project proponent to comply with City grading permit regulations and inspections to reduce sedimentation and erosion. As required by Regulatory Compliance Measure RCM-WQ-5, a Final Hydrology and Hydraulics Analysis would be required to be prepared and submitted to the City for approval to ensure the peak flow of stormwater runoff in the proposed condition would not exceed the outfall capacity. Therefore, with compliance with Regulatory Compliance Measures RCM-WQ-1, RCM-WQ-2, and RCM-WQ-5, the proposed project would not result in substantial soil erosion or the loss of topsoil.</p>	<p>Regulatory Compliance Measure RCM-WQ-1, Construction General Permit. Prior to commencement of construction activities, the Project Proponent shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ Order No. 2012-0006-DWQ, and Order No. 2022-0057-DWQ or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the proposed project from SMARTS and provided to the City of Rancho Palos Verdes (City) Engineer/Public Works Director, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to: preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the proposed project. The SWPPP shall identify the sources of pollutants</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>that may affect the quality of stormwater and shall include BMPs (e.g., soil binders, straw mulch, nonvegetative stabilization, fiber rolls, sandbag barriers, straw bale barriers, a stabilized construction entrance/exit, a stabilized construction roadway, and an entrance/outlet tire wash) to control the pollutants in stormwater runoff. Upon completion of construction activities and stabilization of the project site, a Notice of Termination (NOT) shall be submitted via SMARTS.</p> <p>Regulatory Compliance Measure RCM-WQ-2, Preparation of Erosion Control Plan. The Project Proponent shall submit an Erosion Control Plan to the City Engineer/Public Works Director, or designee, for review and approval concurrent with the grading permit application or with submittal of the grading plans for the proposed project. An approved erosion control plan from the previous year shall be updated and submitted for approval, if necessary, prior to the start of the rainy season each year, as determined by the City Engineer/Public Works Director.</p> <p>Regulatory Compliance Measure RCM-WQ-5, Preparation of Final Hydrology and Hydraulic Analyses. Prior to issuance of a grading permit, the Project Proponent shall submit Final Hydrology and Hydraulic Analyses to the City Engineer/Public Works Director, or designee, and the Los Angeles County Flood Control District for review and approval. The Final Hydrology and Hydraulic Analyses shall be prepared consistent with the requirements of the Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Los Angeles County MS4 Permit), Order No. R4-2012-0175, NPDES Permit No. CAS004001, as amended by Order Nos. WQ</p>	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	2015-0075 and R4-2012-0175-A01. The City Engineer/Public Works Director, or designee, shall ensure that the drainage facilities specified in the Final Hydrology and Hydraulic Analyses are incorporated into the final project design.	
<p>Threshold 4.6.3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?</p> <p>Less Than Significant Impact. With implementation of the proposed project, landslides on the project site would be potentially reduced. The project site is located in an area that experiences seismicity; subsidence could occur on the PBL during a large earthquake. Additionally, removal of the mobile clay along the slide plane of the PBL from possible oversaturation would make the clay flow like liquid beneath portions of the PBL complex. Therefore, the potential for subsidence during a large earthquake or from clay extrusion from the PBL complex exists on the project site. Based on the geologic conditions at the project site, the collapse potential for near-surface project site soils is negligible. Therefore, the project site is not located on soils that are collapsible, and the potential for instability on the project site that would result from soil collapse would be less than significant.</p>	No mitigation is required.	Less Than Significant Impact.
<p>Threshold 4.6.4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?</p> <p>No Impact. The bentonite clays in the PBL are subject to significant volumetric changes with changes in moisture content. However, since there are no existing or planned structures on the project site, impacts from movement associated with the presence of expansive soil will be negligible, assuming that earthwork will include proper moisture conditioning of the clays where they are encountered. Therefore, there would be no impacts related to expansive soil creating substantial direct or indirect risks to life or property.</p>	No mitigation required.	No Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Threshold 4.6.6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? Less Than Significant with Mitigation Incorporated. The proposed project site contains soils that consist of Quaternary landslide deposits from the Pleistocene to the Holocene. According to the paleontological survey results, four documented fossil localities are within the 0.5-mile study area surrounding the project site. One documented fossil locality, LACM VP 413, is located within the project site. LACM VP 413 is not within or near any proposed design features with associated ground disturbance proposed. Where the ground surface was visible, no fossils were observed. According to the Paleontological Resources Assessment, based on the limited ground surface visibility, the existence of previously recorded resources within the project area and the surrounding 0.5-mile study area, and the confirmation that fossil-bearing geologic units are present, there remains a potential to encounter previously undocumented paleontological resources. Therefore, implementation of Mitigation Measures MM-PAL-1, MM-PAL-2, and MM-PAL-3 would reduce potential impacts to unknown paleontological resources to less than significant levels, and no additional mitigation is required.</p>	<p>Mitigation Measure MM-PAL-1, Paleontological Resources Monitor. The City of Rancho Palos Verdes (City) shall retain the services of a Qualified Paleontologist meeting the Secretary of the Interior’s Standards prior to commencing construction and require that all initial ground-disturbing work be monitored by paleontological specialists (Paleontological Resources Monitor) proficient in fossil identification in monitoring contexts.</p> <p>Mitigation Measure MM-PAL-2, Paleontological Mitigation Plan. Prior to commencing construction activity, the City’s qualified Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) outlining procedures for paleontological data recovery for the proposed project and submitted to the City for review and approval. The development and implementation of the PMP shall include consultations with the applicant’s engineering geologist as well as a requirement that the curation of all specimens recovered under any scenario shall be conducted through an appropriate repository agreed upon by the City. All specimens become the property of the City unless it chooses otherwise. If the City accepts ownership, the curation location may be revised. The PMP shall include developing a multilevel ranking system, or Potential Fossil Yield Classification (PFYC), as a tool to demonstrate the potential yield of fossils within a given stratigraphic unit. The PMP shall outline the monitoring and salvage protocols to address paleontological resources encountered during ground-disturbing activities as well as the appropriate recording, collection, and processing protocols to appropriately address any resources discovered. The cost of data recovery is limited to the discovery of a reasonable sample of available material. The interpretation of reasonableness rests with the City.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>Mitigation Measure MM-PAL-3, Final Paleontological Mitigation Report. At the completion of all ground-disturbing activities, the City’s Qualified Paleontologist shall prepare a final paleontological mitigation report summarizing all monitoring efforts and observations, as performed in line with the PMP, and all paleontological resources encountered, if any. The Paleontologist consultant shall also provide follow-up reports of any specific discovery, if necessary.</p>	
<p>Cumulative Geology and Soils Impacts.</p> <p>Less Than Significant Impact. For geology and soils, the cumulative study area consists of the area that could be affected by the proposed project activities and other areas that are affected by the PBL complex. Specifically, this encompasses the areas under the Rancho Palos Verdes Landslide Moratorium, where construction of new structures or buildings is prohibited unless they meet the criteria for an exception. The analysis above indicated no rare or special geological features or soil types on the project site that would be affected by project activities and no other known activities or projects with activities that affect the geology and soils of this site. In addition, the proposed project, as with all foreseeable projects, would be required to comply with the applicable State and local requirements, including the City of Rancho Palos Verdes Building Code. Compliance with Regulatory Compliance Measures RCM-WQ-1, RCM-WQ-2, and RCM-WQ-5 for the proposed project would ensure that cumulative impacts to geology and soils would be less than significant. Therefore, the project’s contribution to cumulative geotechnical and soil impacts is less than cumulatively significant.</p> <p>For paleontological resources, the cumulative study area is the geographical area of Rancho Palos Verdes, which is the geographical area covered by the City’s General Plan, including all goals and policies included therein. The proposed project, in conjunction with</p>	<p>Refer to Regulatory Compliance Measures RCM-WQ-1, RCM-WQ-2, and RCM-WQ-5 and Mitigation Measures MM-PAL-1 through MM-PAL 3, above.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>other development in the city, has the potential to cumulatively impact paleontological resources; however, it should be noted that each development proposal received by the City that requires discretionary approval would be required to undergo environmental review pursuant to CEQA. With compliance with Mitigation Measures MM-PAL-1 through MM-PAL-3, cumulative impacts to paleontological resources would be less than significant.</p>		
4.7: GREENHOUSE GAS EMISSIONS		
<p>Threshold 4.7.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</p> <p>Less Than Significant Impact. Since the proposed project is limited to landslide remediation activities, which are considered construction activity types, minimal operational emissions associated with operation, inspection and maintenance would be created from the proposed project. Emergency pumps on the project site would be gasoline powered tanks. The emergency pumps would contribute a negligible amount of greenhouse gas (GHG) emissions. The proposed project would create a total 1,281.56 metric tons of carbon dioxide equivalent (MT CO₂e), or 42.,72 MT CO₂e per year when amortized over a 30-year period. Therefore, a less than significant generation of GHG emissions would occur from implementation of the proposed project.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases?</p> <p>Less Than Significant Impact. The proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. The proposed project is limited to landslide remediation activities and would not result in the creation of any long-term GHG emissions. The proposed project is anticipated to create 42.72 MT CO₂e per year, which is well below the threshold of significance of 3,000 MT CO₂e</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>per year. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHGs.</p>		
<p>Cumulative Greenhouse Gas Emissions Impacts. Less Than Significant Impact. GHG emissions are global pollutants, and therefore, result in cumulative impacts by nature. Consequently, it is speculative to determine how an individual project’s GHG emissions would impact California. As such, impacts identified under Section 4.7.6, Project Impacts, are not project-specific impacts to global climate change (GCC), but are the proposed project’s contribution to this cumulative impact. The impact of project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to GCC. Additionally, the proposed project, in conjunction with other cumulative projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. Therefore, the project’s cumulative contribution of GHG emissions would be less than significant and the project’s cumulative GHG impacts would also be less than cumulatively considerable.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>4.8: Hazards and Hazardous Materials</p>		
<p>Threshold 4.8.1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Less Than Significant Impact. Construction activities would be temporary in nature and would use hazardous materials typical of construction. These hazardous materials would potentially include gasoline, diesel fuel, lubricants, solvents, and other standard materials used for construction activities. In addition to routine use, all applicable regulations related to spills and accidents would be implemented to avoid accidental release of toxins into the soil and water resources. Operation of the project components would generally not require the routine use of hazardous materials after construction is complete. All operational activities would occur in compliance with federal, State, and local regulations. Therefore,</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>operation of the project would not create a significant hazard to the public or the environment through the use, storage, or transport of hazardous materials, and the impact would be less than significant. No mitigation is required.</p>		
<p>Threshold 4.8.2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</p> <p>Less Than Significant Impact. Construction activities for the proposed project would involve the limited transport, storage, use, or disposal of hazardous materials, such as fuel for construction equipment and materials for road construction. These types of materials, however, are not acutely hazardous, and all storage, handling, and disposal of these materials would comply with existing regulations. Operation of the proposed project will require periodic maintenance. Routine maintenance and inspections would be unlikely to require ground disturbance, but if ground disturbance were required, it would be only in previously disturbed areas. Use of any hazardous materials during maintenance would be in small quantities and in compliance with federal, State, and local regulations. Further, the project will implement an Operations and Maintenance Plan that will include procedures for inspection of each of the project components on a regular basis. For these reasons, impacts would be less than significant. No mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.8.4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?</p> <p>Less Than Significant Impact. The project site was not identified in the site-specific environmental database report. One Controlled Recognized Environmental Condition (CREC), known as Tucker’s Property, was identified in connection with the proposed project</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>area. The site contained a former 1,000-gallon gasoline underground storage tank, and a release of gasoline reportedly impacted soil only. The underground storage tank was reportedly removed, and the case was closed on December 3, 1996. Based on the nature of this listing, the property does not present a Recognized Environmental Condition (REC) to the proposed project. there would not be a significant hazard to the public or the environment during construction or operation of the proposed project, and impacts would be less than significant. No mitigation is required.</p>		
<p>Threshold 4.8.6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</p> <p>Less Than Significant Impact. Four study intersections were selected for the project’s traffic analysis in order to determine potential traffic impacts related to the proposed construction project. Any evacuations involving the project site or the areas surrounding the project site would involve the use of these roadways, but mainly Palos Verdes Drive South as the main arterial that crosses through the project site. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained. The City of Rancho Palos Verdes has published an Emergency Operations Plan (EOP) (2018) and a Multi-Jurisdictional Hazard Mitigation Plan (2020) with the neighboring City of Rolling Hills Estates. In addition, the adjacent City of Rolling Hills has published a Hazard Mitigation Plan (2019) that includes hazard protection measures for homes that abut the project area and landslide. These plans set forth procedures and protocols that the emergency response agencies would implement</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>to safely evacuate the affected populations. Project implementation would provide additional protection of this important component of the evacuation network. The impact would be less than significant. No mitigation is required.</p>		
<p>Threshold 4.8.7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?</p> <p>Less Than Significant Impact. During construction, the number of people present at the project site, which is within the State-designated Very High Fire Hazard Severity Zone, would increase. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained. Impacts from construction of the proposed project related to the exposure of people or structures to a significant risk involving wildland fires would be less than significant with implementation of the Construction Traffic Control Plan. There would be no impact to project occupants, nearby residents, or workers related to post-wildfire landslide risks, and this impact would be less than significant. No mitigation is required.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Cumulative Hazards and Hazardous Materials Impacts.</p> <p>Less Than Significant Impact. The cumulative impact area for hazards and hazardous materials related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing hazards and hazardous materials regulations and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site. Furthermore, the proposed project does not alter the existing hazards and hazardous materials conditions on the project site or increase the potential for wildland fires to occur. Implementation of the proposed project</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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<p>would not result in a significant cumulative impact related to hazards and hazardous materials. The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to hazards and hazardous materials. With compliance with these regulations, impacts related to hazards and hazardous materials would be less than cumulatively significant.</p>		
<p>4.9: HYDROLOGY AND WATER QUALITY</p>		
<p>Threshold 4.9.1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?</p> <p>Less Than Significant Impact.</p> <p>Construction. Construction activities such as earthmoving, maintenance of construction equipment, handling of construction materials, and dewatering can contribute to pollutant loading in stormwater runoff. During soil-disturbing construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, and petroleum products may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Sediment from increased soil erosion and chemicals from spills and leaks have the potential to be discharged to downstream receiving waters during storm events, which can affect water quality. The proposed project is subject to the requirements of the Construction General Permit. A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and construction best management practices (BMPs) detailed in the SWPPP would be implemented during construction, in compliance with the requirements of the Construction General Permit. As referenced by the Hydrology Report, an Erosion Control Plan would be prepared in order to reduce or eliminate the discharge of potential pollutants from stormwater runoff during construction activities. The SWPPP and Erosion and Sediment</p>	<p>Regulatory Compliance Measure RCM-WQ-1, Construction General Permit. Prior to commencement of construction activities, the Project Proponent shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ Order No. 2012-0006-DWQ, and Order No. 2022-0057-DWQ or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the proposed project from SMARTS and provided to the City of Rancho Palos Verdes (City) Engineer/Public Works Director, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Control Plan would detail the BMPs to be implemented during construction and would reduce sedimentation flowing off site and into downstream receiving waters. Therefore, with compliance with Regulatory Compliance Measure RCM-WQ-1 and the City’s Municipal Code, construction-related impacts on surface water quality would be reduced to a less than significant level.</p> <p>Groundwater dewatering activities could affect surface water quality through the discharge of polluted groundwater to surface water bodies. Additionally, the management of any resultant hazardous wastes from project construction could increase the opportunity for hazardous materials releases into groundwater. Groundwater dewatering activities would comply with the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties. Compliance with the Groundwater Discharge Permit would ensure dewatering as part of project construction would not impair surface water quality. Compliance with all regulatory requirements would ensure that impacts related to a violation of any water quality standard or degradation of surface or groundwater quality during construction would be less than significant, and no mitigation is required.</p> <p>Operation. Under proposed conditions, stormwater runoff would sheet flow across the project site and be captured by drainage swales, which would drain to the flow reduction area, discharge to a culvert that passes under Palos Verdes Drive South, and then be discharged to the Pacific Ocean. A Hydrology and Water Quality Technical Report has been prepared for the project in compliance with the Los Angeles MS4 Permit. Implementation of Regulatory Compliance Measure RCM-WQ-3 would require the proposed project to comply with the requirements of the City’s MS4 permit. Implementation of RCM-WQ-4 would require the applicant to prepare a Final Hydrology Report, to be reviewed and approved by the City and the Los Angeles County Flood Control District (LACFCD),</p>	<p>not limited to: preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the proposed project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., soil binders, straw mulch, nonvegetative stabilization, fiber rolls, sandbag barriers, straw bale barriers, a stabilized construction entrance/exit, a stabilized construction roadway, and an entrance/outlet tire wash) to control the pollutants in stormwater runoff. Upon completion of construction activities and stabilization of the project site, a Notice of Termination (NOT) shall be submitted via SMARTS.</p> <p>Regulatory Compliance Measure RCM-WQ-2, Los Angeles County Groundwater Permit. At least 45 days prior to groundwater dewatering activities, the City shall submit an NOI to the Los Angeles Regional Water Quality Control Board (RWQCB) to obtain coverage under the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties (Groundwater Discharge Permit), Order No. R4-2018-0125, NPDES No. CAG994004. The construction contractor shall comply with the requirements of Order No. R4-2018-0125, NPDES No. CAG994004. Groundwater dewatering activities shall comply with all applicable provisions in the Groundwater Discharge Permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a NOT shall be submitted to the Los Angeles RWQCB.</p>	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>that addresses the requirements of the Los Angeles MS4 Permit, including incorporating BMPs that target pollutants of concern in stormwater runoff. With implementation of Regulatory Compliance Measures RCM-WQ-1 and RCM-WQ-4, which require compliance with the Construction General Permit and Groundwater Discharge Permit during construction and compliance with the Los Angeles MS4 Permit and City’s Municipal Code, including preparation of a Final Hydrology Report, during project operations, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant.</p>	<p>Regulatory Compliance Measure RCM-WQ-3, Los Angeles MS4 Permit. During final design, the City shall ensure that the proposed project complies with the requirements of The Waste Discharge Requirements and NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties, Order R4-2021-0105 NPDES NO. CA004004.</p> <p>Regulatory Compliance Measure RCM-WQ-4, Preparation of Final Hydrology and Water Resources Technical Report (Hydrology Report). Prior to issuance of a grading permit, the Project Proponent shall submit Final Hydrology and Water Resources Technical Report to the City Engineer/ Public Works Director, or designee, and the Los Angeles County Flood Control District for review and approval.</p>	
<p>Threshold 4.9.2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin?</p> <p>Less Than Significant Impact. During construction, groundwater could be encountered at depths of 11 to 20 feet below ground surface. Due to the fact that groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present near the surface, groundwater dewatering may be required during project construction. groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial. Therefore, construction impacts related to a decrease in groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be less than significant, and no mitigation is required. The proposed project is designed to decrease on-site infiltration and groundwater recharge in order to increase site stability and public safety. The City of Rancho Palos Verdes partially overlays the Los Angeles Coastal Plain Groundwater Basin,</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>specifically the West Coast Subbasin. However, according to the Hydrology Report, the project site is outside the boundaries of the subbasin. Therefore, the proposed reduction in groundwater recharge would not substantially decrease groundwater supplies. The proposed project would not deplete groundwater supplies or interfere with groundwater recharge in a manner that may impede sustainable groundwater management, and impacts would be less than significant.</p>		
<p>Threshold 4.9.3(i): Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?</p> <p>Less Than Significant Impact. During project construction activities, soil would be exposed and disturbed, and drainage patterns would be temporarily altered during grading and other construction activities. Therefore, there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. Compliance with the requirements of the Construction General Permit and the City’s Municipal Code would ensure that construction impacts related to on- or off-site erosion or siltation would be less than significant, and no mitigation is required. As a part of the surface water improvements, a drainage swale would be designed to collect stormwater runoff and discharge it into a proposed flow-reduction basin. The drainage swale combined with the flow-reduction area is primarily intended to reduce on-site infiltration, which contributes to landslide movement. However, the drainage swale and flow reduction area would also reduce soil erosion by collecting and retaining stormwater in the flow reduction area, which will allow fine particles of soil to settle in the flow reduction area before it is discharged through a 60-inch pipe that runs under Palos Verdes Drive South to the Pacific Ocean. The proposed project would not</p>	<p>Refer to Regulatory Compliance Measure RCM-WQ-1, above.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site, and impacts would be less than significant. No mitigation is required.		
<p>Threshold 4.9.3(ii): Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</p> <p>Less Than Significant Impact. The proposed project would comply with the requirements of the Construction General Permit during project construction, which would include the preparation and implementation of a SWPPP. With adherence to Regulatory Compliance Measure RCM-WQ-1, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in flooding and impede or redirect flood waters would be less than significant, and no mitigation is required. As part of the surface stormwater improvements, a drainage swale would be designed to collect stormwater runoff and discharge it into a proposed flow-reduction area. The flow reduction area would release stormwater at a gradual rate through a small opening and route it through a 60-inch pipe that runs under Palos Verdes Drive South, where it would be discharged to the Pacific Ocean. Proposed improvements also include installing, replacing, and refurbishing underground piping throughout the project site to properly convey stormwater runoff. The proposed project would improve existing on-site stormwater collection and conveyance infrastructure in order to better manage stormwater flows and reduce the rate surface runoff in a manner that would in turn reduce on- and off-site flooding. Therefore, impacts would be less than significant.</p>	Refer to Regulatory Compliance Measure RCM-WQ-1, above.	Less Than Significant Impact

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Threshold 4.9.3(iii): Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</p> <p>Less Than Significant Impact. Construction of the proposed project has the potential to exceed the capacity of existing stormwater drainage systems and introduce pollutants into stormwater that percolates into the ground or flows into the Pacific Ocean due to erosion, siltation, and accidental spills of hazardous materials. However, as specified in Regulatory Compliance Measure RCM-WQ-1, the Construction General Permit requires preparation of a SWPPP and the Hydrology Report has specified preparation of an Erosion Control Plan. With implementation of Regulatory Compliance Measure RCM-WQ-1, construction impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required. Stormwater will surface flow into a drainage swale and then discharge to a flow-reduction area, which would be appropriately sized to manage the flow of excess stormwater runoff. Flow from the flow reduction area would be released gradually into a 60-inch pipe and discharged into the Pacific Ocean. Compliance with Regulatory Compliance Measure RCM-WQ-3, which requires the implementation of BMPs to reduce pollutants of concern in stormwater runoff in compliance with the Los Angeles County MS4 Permit, would ensure that the proposed project does not discharge of polluted runoff. Therefore, the proposed project would not create or contribute stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant.</p>	<p>Refer to Regulatory Compliance Measures RCM-WQ-1 and RCM-WQ-3, above.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Threshold 4.9.3(iv): Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?</p> <p>No Impact. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Nos. 06037C1940F and 06037C2026G, the project area is not located within a 100-year floodplain. The project area is located entirely within FEMA Zone X, which is defined by FEMA as an area outside the 500-year floodplain. The edge of the project site that borders the Pacific Ocean is located within Zone VE. Zone VE is defined as coastal areas with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves. Due to the low flood risk and the proposed improvements to existing drainage infrastructure and conditions, the proposed project would improve existing drainage conditions on site, which would reduce the potential for on-site flooding. Therefore, the proposed project would not impede or redirect flood flows, and no impacts would occur.</p>	<p>No mitigation is required.</p>	<p>No Impact.</p>
<p>Threshold 4.9.4: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?</p> <p>Less Than Significant Impact. The project is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). The Los Angeles RWQCB adopted its Water Quality Control Plan (i.e., Basin Plan) in 2019. The proposed project would comply with the Construction General Permit and Los Angeles County MS4 Permit, which requires preparation of a SWPPP, preparation of Low Impact Development (LID) Best Management Practices (BMPs), and implementation of construction and operational BMPs to reduce pollutants of concern in stormwater runoff (as specified in Regulatory Compliance Measures RCM-WQ-1 through RCM-WQ-4). The project would not result in water quality impacts that would conflict with the Los Angeles RWQCB Water Quality Control Plan</p>	<p>Refer to Regulatory Compliance Measures RCM-WQ-1 through RCM-WQ-4, above.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>(Basin Plan), and impacts related to conflict with a water quality control plan would be less than significant. Additionally, the City partially overlays the West Coast Subbasin of the Los Angeles Coastal Plain Groundwater Basin The Coastal Plain of Los Angeles – West Coast groundwater basin is designated as a Very Low priority basin. Therefore, no groundwater sustainability plan has been established for this basin. The proposed project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, the proposed project would not conflict with or obstruct implementation of the Los Angeles RWQCB Water Quality Control Plan (Basin Plan) or a sustainable groundwater management plan, and impacts would be less than significant.</p>		
<p>Cumulative Hydrology and Water Quality Impacts. Less Than Significant Impact. The cumulative impact area for hydrology and water quality for the proposed project is the South Santa Monica Watershed. New development and redevelopment can result in increased stormwater runoff and increased urban pollutants in stormwater runoff from project sites. Each related project must include BMPs to reduce impacts to water quality and hydrology in compliance with local ordinances and plans adopted to comply with requirements of the various NPDES permits. The preparation, approval, and implementation of a SWPPP (for construction) and project-specific stormwater control measures and LID measures (for operation) would be required for each related project to minimize water quality impacts. In addition, the stormwater control measures would be required to determine the stormwater controls required to minimize increases in runoff from each site so they do not exceed regulatory requirements or exceed the capacity of downstream storm drain systems. By complying with total maximum daily loads (TMDLs), a project’s contribution to overall water quality improvement in the South Santa Monica Watershed in the context of the regulatory program is designed to account for cumulative impacts. The proposed project would be</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>required to comply with the requirements of the Construction General Permit and the Los Angeles County MS4 Permit and implement construction and operational BMPs pursuant to approved SWPPP and the stormwater control/LID measures to reduce pollutants in stormwater runoff. Compliance with these regional programs and permits constitutes compliance with programs intended to address cumulative water quality impacts. Because the proposed project and other related projects would comply with applicable National Pollutant Discharge Elimination System (NPDES) and City requirements and would include BMPs to reduce the volume of stormwater runoff and pollutants of concern in stormwater runoff, the cumulative hydrology and water quality impacts of the proposed project and related projects would be less than significant.</p>		
<p>4.10: LAND USE AND PLANNING</p>		
<p>Threshold 4.10.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?</p> <p>Less Than Significant Impact. City of Rancho Palos Verdes General Plan. Because the proposed project does not consist of any new development and will not result in changes to the existing uses on the project site, the land uses would remain consistent with these designations, and no General Plan Amendment would be required to implement the proposed project. The proposed project would not conflict with any applicable General Plan land use plan, policy, or regulation adopted by the City for the purpose of avoiding or mitigating an environmental impact.</p> <p>Coastal Specific Plan. Among the purposes of the Coastal Specific Plan are the objectives to address bluff stability for areas that are geologically unstable, biological resources for the continued existence and quality of terrestrial and marine habitats, and limitations of infrastructural systems due to the City’s location. The</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>proposed project would not conflict with any applicable Coastal Specific Plan policy for the purpose of avoiding or mitigating an environmental impact.</p> <p>Municipal Code. The proposed project would require several discretionary actions related to implementation of the proposed project. To ensure compliance Chapter 15.20, Chapter 17.72, and Section 17.76.040 of the City’s Municipal Code, the proposed project would need to obtain a grading permit for proposed grading that would be necessary for the proposed project improvements, and a coastal permit prior to construction.</p> <p>The proposed project would minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface. The project does not include development within the Landslide Moratorium Area and is being constructed to minimize landslide risk and enhance public safety as allowed per Exception E (RPVMC 15.20.040(E)); therefore, the project remains consistent with the Landslide Moratorium Ordinance. The proposed project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.</p>		
<p>Cumulative Land Use and Planning Impacts.</p> <p>Less Than Significant Impact. The cumulative impact area for land use and planning related to the proposed project is the service area. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing utilities and service systems and would be reviewed for consistency with General Plan goals and policies and Zoning Code development</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
standards applicable to each site. Implementation of the proposed project would not result in a significant cumulative impact related to land use and planning. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to land use and planning.		
4.11: NOISE		
<p>Threshold 4.11.1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</p> <p>Less Than Significant Impact. The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the project vicinity in excess of the standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Noise impacts from on-site activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The greatest construction noise impacts would occur during the staging areas and access routes component, with a noise level as high as 71 A-weighted decibel equivalent continuous sound level (dBA L_{eq}) at the nearest homes to the north, which are within the Federal Transit Administration (FTA) daytime construction noise standard of 80 dBA. Therefore, through adherence to the limitation of allowable construction times provided in the City’s Municipal Code, project-related noise levels would not exceed any standards established in the General Plan or Noise Ordinance, nor would project activities create a substantial temporary increase in ambient noise levels. Additionally, according to the Traffic Analysis, Palos Verdes Drive South in the vicinity of the project site currently has 16,500 vehicle trips per day. The vehicle trips generated by the proposed project would increase the traffic</p>	No mitigation is required.	Less Than Significant Impact.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>volume on Palos Verdes Drive South by up to 0.5 percent, which is well below the doubling of traffic volumes required to increase roadway noise levels by 3 dBA. Therefore, roadway noise impacts associated with construction and operation of the proposed project would be less than significant.</p>		
<p>Threshold 4.11.2: Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels? Less Than Significant Impact. The proposed project would not expose persons to generation of excessive ground-borne vibration or ground-borne noise levels. Vibration impacts from the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are homes located on Narcissa Drive, where construction activities would occur as close as 220 feet to the homes. Based on typical propagation rates, the vibration level at the nearest homes (220 feet away) would be 0.08 inch per second peak particle velocity (PPV), which would be below the 0.25 inch per second PPV threshold detailed above. Ongoing operation, inspection, and maintenance activities associated with hydrauger pumps are not expected to result in vibration impacts. Vibration impacts associated with construction and operation of the proposed project would be less than significant, and no mitigation is necessary.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Cumulative Noise Impacts. Less Than Significant Impact. The cumulative impact area for noise related to the proposed project is the immediately surrounding area. Several residential and a few commercial development projects (remodels) are approved and/or pending within Rancho Palos Verdes. Given the minimal number of cumulative projects with units dispersed at various locations in the city and not in the immediate project area, cumulative impacts would be negligible. Furthermore, each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing noise and</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>would be reviewed for consistency with the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), General Plan goals and policies, and Zoning Code development standards applicable to each site. Implementation of the proposed project would not result in a significant cumulative impact related to noise.</p>		
<p>4.12: RECREATION</p>		
<p>Threshold 4.12.1: Would the project increase the use of existing neighborhood and regional park or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</p> <p>Less Than Significant Impact with Mitigation Incorporated. The locations of the surface swales and hydraugers that are proposed as a part of the project impede on both reserves located within the City-owned Preserve. Therefore, the construction of these proposed project elements has the potential to temporarily close portions of the trail networks within the Portuguese Bend Reserve and Abalone Cove Park and Reserve, and coastal open space west of Abalone Cove Park and Reserve, in order to construct and implement the proposed project’s engineering components. The project engineering and design team will exercise efforts to ensure that the integrity of these trail networks remains as close to the pre-construction condition as possible and that trails will still meet City trail standards. With implementation of Mitigation Measures MM-REC-1, MM-REC-2, and MM-REC 3, which will ensure any trails affected by construction activities are restored to their pre-construction condition and meet City trail standards; require the City to notify the City’s Recreation and Parks Department regarding any trail closures in order to inform the public; and, finally, ensure that the City will notify the Palos Verdes Peninsula Land Conservancy and public of any repairs or reroutes to Preserve trails that become damaged during project construction, potential impacts to recreational facilities would be reduced to less than significant.</p>	<p>Mitigation Measure MM-REC-1, Swale Design. Prior to finalizing the design of any of the project’s components, the Project Engineer shall confirm that trails affected by construction activities are restored to their pre-construction condition is acceptable to the City’s Director of Recreation and Parks. Rerouting /reconstruction of trails shall be reviewed and approved by the Project Engineer, and provided to the Palos Verdes Peninsula Land Conservancy (PVPLC) for their input.</p> <p>Mitigation Measure MM-REC-2, Trail Closure Notifications. Fifteen days prior to the anticipated closure of any designated trails within the Abalone Cove Park and Reserve or Portuguese Bend Reserve, the Project Engineer, and/or designee, shall notify the City’s Recreation and Parks Department in order to notify PVPLC and provide adequate notice to the public about any expected trail closures during project construction. The public will be notified of closures via the City’s and the PVPLC’s websites, the City’s listserv and social media platforms, and use of on-site signs at relevant entries to the Palos Verdes Nature Preserve and at closure locations.</p> <p>Mitigation Measure MM-REC-3, Trail Repair/Maintenance. If Preserve trails become damaged or require maintenance resulting from the project, the City will coordinate with the PVPLC, to repair trails in accordance with the City Council-adopted Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and the Preserve Public Use Master Plan (PUMP).</p>	<p>Less Than Significant Impact.</p>

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Cumulative Recreation Impacts.</p> <p>Less Than Significant Impact. The cumulative impact area for recreation related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing recreational resources and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to recreation. Additionally, any recreation impacts (trail closures) related to this project will be temporary. Mitigation measures have been added to alleviate any long-term impacts. With compliance with these mitigation measures and regulations, impacts related to recreation would be less than cumulatively significant.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>4.13: TRANSPORTATION</p>		
<p>Threshold 4.13.1: Would the project conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?</p> <p>Less Than Significant Impact. Construction of the project components would generate vehicle trips associated with workers accessing the project site; delivery of construction equipment, vehicles, and materials; and disposal of construction debris. Construction equipment and vehicles will be staged on site. Although the project does not include any characteristics that would physically impair or otherwise interfere with transit, roadways, bicycle facilities, and/or pedestrian facilities in the project vicinity, the proposed project would require temporary lane controls on Palos Verdes Drive South to allow for construction activities associated with implementation of the project components on the project site, particularly the replacement of the existing drain under</p>	<p>Regulatory Compliance Measure RCM-T-1. Prior to permit issuance, the construction contractor shall prepare a truck haul route plan identifying routes for heavy truck and equipment traffic. The Truck Haul Route Plan shall be approved by the City Engineer. Loaded trucks shall be prohibited from traveling on Palos Verdes Drive South through the landslide.</p> <p>Regulatory Compliance Measure RCM-T-2: Prior to permit issuance, the construction contractor shall prepare a Construction Traffic Control Plan for approval by the City Engineer. The Construction Traffic Control Plan shall include, at a minimum, the following components:</p> <ul style="list-style-type: none"> ● Maintain existing access for land uses in proximity of to the project site; 	<p>Less Than Significant Impact.</p>

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<p>the roadway. The highest level of overall construction traffic impact during the a.m. peak hour is expected to occur when haul/vendor truck trips are forecast to result in 8 passenger car equivalent (PCE)-adjusted inbound truck trips and 8 PCE-adjusted outbound truck trips. The highest level of overall construction traffic impact during the commuter p.m. peak hour is expected to occur when the peak construction workforce is forecast to result in 6 outbound vehicle trips. It is also estimated that 16 PCE-adjusted vendor truck trips. With the implementation of Regulatory Compliance Measures RCM-T-1 and RCM-T-2, potential conflicts between construction activity and through traffic would be minimized. Because of these requirements, and because construction-related trips would be nominal and well dispersed throughout the day, construction-related transportation impacts are expected to be less than significant.</p>	<ul style="list-style-type: none"> ● Limit any potential lane closures to off-peak travel periods; ● Schedule receipt of construction materials during non-peak travel periods, to the extent possible; ● Coordinate deliveries to reduce the potential of trucks waiting to unload for extended periods of time; ● Prohibit parking by construction workers on adjacent streets and direct construction workers to available parking; and ● Maintain priority access for emergency vehicles. ● Limit hours of deliveries, to no earlier than 7:00 a.m. and no later than 6:00 p.m., Monday through Friday, and between 9:00 a.m. to 5:00 p.m. on Saturday. No construction shall be permitted on Sundays and federal holidays. 	
<p>Threshold 4.13.2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?</p> <p>Less Than Significant Impact. The traffic analysis utilizes existing, long-established protocols in accordance with current City guidelines, which are intended for application to an individual development project’s operational traffic, as well as traffic associated with long-range planning projects. It is assumed that the construction-related traffic associated with the proposed project could potentially result in a temporary increase in regional vehicle miles traveled (VMT). However, since the traffic anticipated to be generated during construction activities is expected to be temporary and intermittent, any increase in regional VMT resulting from this construction activity is also assumed to be temporary and intermittent. Similarly, vehicle trips associated with the operation, inspection, and maintenance of the project components will be conducted on an as-needed basis, utilizing existing access points to the project site, and are not expected to result in a substantial increase in regional VMT daily trips.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Threshold 4.13.3: Would the project substantially increase hazards due to geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</p> <p>Less Than Significant Impact. Because of the potential for roadway construction controls along portions of Palos Verdes Drive South, there could be a temporary increase in hazards. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures on Palos Verdes Drive South are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement and a Construction Traffic Control Plan will be prepared for the project. Potential impacts associated with hazardous design features or incompatible land uses are considered less than significant.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>Threshold 4.13.4: Would the project result in inadequate emergency access?</p> <p>Less Than Significant Impact. There is a potential that portions of Palos Verdes Drive South may be affected temporarily during construction. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement and a Construction Traffic Control Plan will be prepared for the project. Potential effects on emergency access due to construction or operation of the proposed project are considered less than significant.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Cumulative Transportation Impacts.</p> <p>Less Than Significant Impact. The cumulative impact area for transportation is the city of Rancho Palos Verdes. The majority of the vehicle trips associated with the proposed project are temporary and would occur during construction. Vehicle trips associated with operation, inspection, and maintenance of the project components would be nominal. Given the temporary nature of the majority of the project trips, there will be no cumulative impacts. Additionally, the project will protect important city infrastructure. From a transportation and circulation perspective, landslide remediation will provide for the continued operation of Palos Verdes Drive South, an important transportation circulation link connecting various communities within Rancho Palos Verdes. If Palos Verdes Drive South were inoperable due to landslide activity, VMT within the city would increase due to residents needing to take circuitous routes to traverse the city.</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>
<p>4.14: TRIBAL CULTURAL RESOURCES</p>		
<p>Threshold 4.14.1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).</p> <p>Less Than Significant Impact. The cultural resources survey conducted in 2022 confirmed the presence of a prehistoric deposit of marine shell and lithic debitage (P-19-002253) and a prehistoric marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris (P-19-002586) on the project site. Neither of the prehistoric cultural resources were determined to be on or eligible for listing in the California Register of Historical</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Resources (CRHR) or the National Register of Historic Places (NRHP), and they are not historical resources pursuant to Section 15064.5 of the State CEQA Guidelines. The proposed project would not cause a substantial adverse change in the significance of a known tribal cultural resource, defined as a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR or in a local register of historical resources as defined in California Public Resources Code (PRC) Section 5020.1(k).</p>		
<p>Threshold 4.14.2. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p> <p>Less Than Significant with Mitigation Incorporated. The Sacred Lands File (SLF) was completed with negative results. Two cultural resources, a prehistoric deposit of marine shell and lithic debitage (P-19-002253) and a prehistoric marine shell and lithic debitage as well as a historic refuse deposit consisting of construction debris (P-19-002586), were also identified on the project site by the 2022 assessment. Neither P-19-002253 nor P-19-002586 meet any of the four criteria for listing on the NRHP or CRHR. P-19-002253 and P-19-002586 would not be impacted by the proposed project, which would avoid both sites. On August 5, 2020, pursuant to the provisions of Assembly Bill (AB) 52, the City provided consultation requests using the list provided by the Native American Heritage</p>	<p>Mitigation Measure MM-TCR-1, Tribal Cultural Resources Monitoring. Prior to the commencement of construction, City of Rancho Palos Verdes (City) approved qualified archaeologist to monitor all ground-disturbing activities associated with the project, including, but not limited to, grading, excavating, clearing, leveling and backfilling. The evaluation shall be conducted by an archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983) and qualified to identify subsurface tribal cultural resources. The archaeologist shall observe all ground-disturbing activities on the project site at all times the ground-disturbing activities are taking place. If ground-disturbing activities are simultaneously occurring at multiple locations on the project site, an archaeologist shall be required to monitor each location where the ground-disturbing activities are occurring.</p> <p>Prior to the commencement of any ground-disturbing activities at the project site, the City, or its successor, shall notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground-disturbing activities are about to commence</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>Commission (NAHC). The Gabrielino Tongva Indians of California (GTIOC) Tribal Council responded on August 13, 2020, with a request to engage in formal consultation with the City. The tribe shared concerns related to the potential for encountering the tribe’s ancestral cultural resources on the proposed project site and requested monitoring of construction and treatment of any discovered tribal cultural resources. Mitigation Measure MM-TCR-1 has been identified as a result of consultation with the Native American tribe to address impacts to tribal cultural resources that may inadvertently be found during construction activities. Therefore, potential impacts to unknown tribal cultural resources on the project site would be reduced to less than significant.</p>	<p>and invite the tribe(s) to observe the ground-disturbing activities if the tribes wish to monitor, at their own expense.</p> <p>In the event that any subsurface objects or artifacts that may be tribal cultural resources are encountered during the course of the ground-disturbing activities, all such activities shall temporarily cease within the area of discovery, the radius of which shall be determined by the qualified archeologist and tribal monitor, until the potential tribal cultural resources are properly assessed and addressed pursuant to the process set forth below:</p> <ol style="list-style-type: none"> 1. Upon a discovery of a potential tribal cultural resource, an applicant, or its successor, shall immediately stop all ground-disturbing activities and contact the following: (1) all California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project; (2) and the City’s Community Development Department, Planning Division. 2. If the City determines, pursuant to Public Resources Code Section 21704 (a)(2), that the object or artifact appears to be a tribal cultural resource in its discretion and supported by substantial evidence, the City shall provide any affected tribe a reasonable period of time, not less than 14 days, to conduct a site visit and make recommendations to the applicant, or its successor, and the City regarding the monitoring of future ground-disturbing activities, as well as the treatment and disposition of any discovered tribal cultural resources. 3. The City, shall implement the tribe’s recommendations if a qualified archaeologist, retained by the City concludes that the tribe’s recommendations are reasonable and feasible. 	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>4. In addition to any recommendations from the applicable tribe(s), the City-approved qualified archeologist shall develop a list of actions that shall be taken to avoid or minimize impacts to the identified tribal cultural resources substantially consistent with best practices identified by the Native American Heritage Commission (NAHC) and in compliance with any applicable federal, State, or local law, rule, or regulation.</p> <p>5. If the City, or its successor, does not accept a particular recommendation determined to be reasonable and feasible by the qualified archaeologist, the City, or its successor, may request mediation by the City’s mediator. The mediator must have the requisite professional qualifications and experience to mediate such a dispute. The City shall make the determination as to whether the mediator is at least minimally qualified to mediate the dispute. After making a reasonable effort to mediate this particular dispute, the City may: (1) require that the recommendation be implemented as originally proposed by the archeologist; (2) require that the recommendation, as modified by the City, be implemented as it is at least equally effective to mitigate a potentially significant impact; (3) require a substitute recommendation to be implemented that is at least equally effective to mitigate a potentially significant impact to a tribal cultural resource; or (4) not require the recommendation to be implemented because it is not necessary to mitigate any significant impacts to tribal cultural resources. The applicant, or its successor, shall pay all costs and fees associated with the mediation.</p> <p>6. The City may recommence ground-disturbing activities outside of a specified radius of the discovery site so long as this radius has been reviewed by a qualified</p>	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
	<p>archaeologist and determined to be reasonable and appropriate.</p> <p>7. The City may recommence ground-disturbing activities inside of the specified radius of the discovery site only after it has complied with all the recommendations developed and approved pursuant to the process set forth in Items 2 through 5, above.</p> <p>8. Copies of any subsequent prehistoric archaeological study, tribal cultural resources study, or report detailing the nature of any significant tribal cultural resources, remedial actions taken, and disposition of any significant tribal cultural resources shall be submitted to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, and to the NAHC for inclusion in its Sacred Lands File.</p> <p>Notwithstanding Item 8, above, any information determined to be confidential in nature by the City Attorney’s Office, shall be excluded from submission to the SCCIC or the general public under the provisions of the California Public Records Act and the California Public Resources Code (PRC).</p>	
<p>Cumulative Tribal Cultural Resources Impacts.</p> <p>Less Than Significant with Mitigation Incorporated. The cumulative impact area for tribal cultural resources for the proposed project is the city of Rancho Palos Verdes. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing tribal cultural resources and would be reviewed for consistency with the General Plan goals and policies and Zoning Code development standards applicable to each site. Potential</p>	<p>Refer to Mitigation Measure MM-TCR-1, above.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>impacts of the proposed project to unknown tribal cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in Rancho Palos Verdes, could contribute to a cumulatively significant impact due to the overall loss of tribal cultural remains unique to the region. When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant. As such, implementation of Mitigation Measure MM-TCR-1 would ensure that the proposed project, together with cumulative projects, would not result in a significant cumulative impact to tribal cultural resources.</p>		
<p>4.15: UTILITIES AND SERVICE SYSTEMS</p>		
<p>Threshold 4.15.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?</p> <p>Less Than Significant Impact. The proposed project would not develop any buildings or structures or result in an increase in population that would require additional water, wastewater, electrical, natural gas, or telecommunications facilities, and construction would require small amounts of water, which may result in wastewater generation. Although the proposed project would require minimal water supplies to be used during construction and temporary irrigation necessary to restore habitat, these activities that would require a negligible amount of water would occur during the construction phases of the project and, therefore, would be temporary in nature and have no overall effect on long-term water demand. The project would reduce the likelihood of landslide movement, which would alleviate health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure (including stormwater drainage facilities) at the project site. Therefore, project impacts to infrastructure and service systems would be less than</p>	<p>No mitigation is required.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
significant and actually beneficial, as stabilization would reduce the likelihood of infrastructure relocation.		
<p>Cumulative Utilities and Service Systems Impact. Less Than Significant Impact. The cumulative impact area for utilities and service systems related to the proposed project is the service area. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to their own consistency analysis for policies and regulations governing utilities and service systems and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site. Implementation of the proposed project would not result in a significant cumulative impact related to utilities and service systems. The landslide remediation project is designed to control land movement and protect the integrity of existing utilities and service systems. With compliance with these regulations, impacts related to utilities and service systems would be less than cumulatively significant.</p>	No mitigation is required.	Less Than Significant Impact.
4.16: WILDFIRE		
<p>Threshold 4.16.1(a): If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan? Less Than Significant Impact. The City of Rancho Palos Verdes has published an Emergency Operations Plan (EOP) (2018) and a Multi-Jurisdictional Hazard Mitigation Plan (2020) with the neighboring City of Rolling Hills Estates. From information provided by the Los Angeles County Department of Public Works (LADPW) and the City's General Plan, Palos Verdes Drive South is the main disaster evacuation route that would be utilized for any potential evacuations that occur at the project site. This arterial, as previously noted, is a local disaster evacuation route. Project implementation</p>	<p>Regulatory Compliance Measure RCM-T-1: Prior to permit issuance, the construction contractor shall prepare a truck haul route plan identifying routes for heavy truck and equipment traffic. The Truck Haul Route Plan shall be approved by the City Engineer. Loaded trucks shall be prohibited from traveling on Palos Verdes Drive South through the landslide.</p> <p>Regulatory Compliance Measure RCM-T-2: Prior to permit issuance, the construction contractor shall prepare a Construction Traffic Control Plan for approval by the City Engineer. The Construction Traffic Control Plan shall include, at a minimum, the following components:</p>	Less Than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>would provide additional protection of this important component of the evacuation network. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained. The proposed project is not expected to substantially impair implementation of an adopted emergency response plan or emergency evacuation plan during a wildfire event that impacts the project area or the region. The impact would be less than significant</p>	<ul style="list-style-type: none"> ● Maintain existing access for land uses in proximity of to the project site; ● Limit any potential lane closures to off-peak travel periods; ● Schedule receipt of construction materials during non-peak travel periods, to the extent possible; ● Coordinate deliveries to reduce the potential of trucks waiting to unload for extended periods of time; ● Prohibit parking by construction workers on adjacent streets and direct construction workers to available parking; and ● Maintain priority access for emergency vehicles. ● Limit hours of deliveries, to no earlier than 7:00 a.m. and no later than 6:00 p.m., Monday through Friday, and between 9:00 a.m. to 5:00 p.m. on Saturday. No construction shall be permitted on Sundays and federal holidays. 	
<p>Threshold 4.16.1(b): If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?</p> <p>Less Than Significant Impact. Although no physical habitable structures are proposed to be developed at the project site, the surrounding area still contains various ridgelines and slopes, which may have the potential to contribute to exacerbating wildfire risks based on the nature of their topography. The proposed project does not involve changes to existing overall slope characteristics. In the event a wildfire were to commence to the northeast of the project site, prevailing winds could push the wildfire toward the project site. Based on the average wind speed and direction, any smoke created by a wildfire in the vicinity of the project site would more than likely dissipate quickly and therefore would not expose nearby</p>	<p>Regulatory Compliance Measure RCM-WF-1. The proposed project would comply with the titles outlined in the California Code of Regulations (CCR) that establish guidelines for emergency fire response, fire prevention, and construction material standards.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
<p>residents of the site to pollutant concentrations of wildfire smoke. The geotechnical features associated with the proposed project would be developed consistent with the applicable requirements from the State of California’s California Code of Regulations (CCR) that focus on fire reduction design features. Furthermore, the proposed project will not create any new physical building structures that would be prone to wildfire risks due to the topographic area of the project site. The proposed project itself would not exacerbate existing wildfire risks due to changes in landscape slope, prevailing winds, location, or other conditions conducive to wildfire ignition and spread. Therefore, this impact would be less than significant.</p>		
<p>Threshold 4.16.1(d): If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as result of runoff, post-fire slope instability, or drainage changes?</p> <p>Less Than Significant Impact. The purpose of the proposed project is to minimize landslide movement in the Portuguese Bend Landslide (PBL) area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface by constructing surface swales and installing a complex subsurface water extraction system (hydraugers) to alleviate artesian pressure and also lower water levels within the landslide mass. Therefore, the construction associated with the proposed project would not expose people or structures to significant risks, including downslope landslides, as a result of runoff, post-fire slope instability, or drainage changes. In the unlikely event that a wildfire should spread at the project site, it is not expected that the project would contribute any additional runoff or sedimentation to any nearby downstream drainages. Therefore, the current risk of downslope or downstream flooding as a result of runoff, post-fire slope instability, or drainage changes</p>	<p>See Regulatory Compliance Measure RCM-WF-1, above.</p>	<p>Less Than Significant Impact.</p>

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Regulatory Compliance Measures, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Regulatory Compliance Measures	Level of Significance After Mitigation
would not be exacerbated with implementation of the proposed project.		
<p>Cumulative Wildfire Impact.</p> <p>Less Than Significant Impact. The cumulative impact area for wildfire related to the proposed project is the City of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the City. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing wildfire regulations and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site. Furthermore, the proposed project does not alter the existing wildland fire conditions on the project site or increase the potential for wildland fires to occur. The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to wildfire. With compliance with these regulations, impacts related to wildfire would be less than cumulatively significant.</p>	No mitigation is required.	Less Than Significant Impact.

2.0 INTRODUCTION

2.1 OVERVIEW AND PROJECT BACKGROUND

This Draft Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the proposed City of Rancho Palos Verdes (City) Portuguese Bend Landslide Remediation Project (project). The City is the “public agency which has the principal responsibility for carrying out or approving the project” and, as such, is the “Lead Agency” for this project under the California Environmental Quality Act of 1970 (CEQA) (*State CEQA Guidelines for Implementation of CEQA* [*State CEQA Guidelines*] Section 15367). CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. This Draft EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. The anticipated project approvals associated with the proposed project are described in Section 3.0, Project Description.

The City of Rancho Palos Verdes, as the Lead Agency, determined that the proposed project may have a significant effect on the environment and that an EIR would be required to more fully evaluate potential adverse environmental impacts that may result from development of the proposed project. As a result, this Draft EIR has been prepared in accordance with CEQA, as amended (Public Resources Code [PRC] Section 21000, et seq.), and the *State CEQA Guidelines* (California Code of Regulations [CCR], Title 14, Section 15000, et seq.).

Questions regarding the preparation of this document and the City’s review of the proposed project should be referred to the following:

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2.2 PURPOSE AND TYPE OF EIR/INTENDED USES OF THE EIR

This Draft EIR has been prepared to evaluate environmental impacts that may result from implementation of the proposed project. As the Lead Agency, the City has the authority for preparation of this Draft EIR and, after the comment/response process, certification of the Final EIR and approval of the proposed project as described in this Draft EIR may be considered by the City Council.

The City and Responsible Agencies have the authority to make decisions on discretionary actions relating to implementation of the proposed project. As previously stated, this Draft EIR is intended to serve as an informational document to be considered by the City and Responsible Agencies during deliberations on the proposed project. This Draft EIR evaluates and mitigates a reasonable worst-case scenario of potential impacts associated with the proposed project.

This Draft EIR will serve as a Project EIR pursuant to *State CEQA Guidelines* Section 15161. According to Section 15161 of the *State CEQA Guidelines*, a Project EIR is appropriate for specific development projects in which information is available for all phases of the project, including planning, construction, and operation.

As previously stated, the City is the Lead Agency for the proposed project under CEQA (*State CEQA Guidelines* Section 15367). CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary actions. This Draft EIR provides information to the Lead Agency and other public agencies, the general public, and decision makers regarding the potential environmental impacts from construction and operation of the proposed project. The purpose of the public review of the Draft EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with CEQA. Section 15151 of the *State CEQA Guidelines* states the following regarding standards from which adequacy is judged:

“An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have not looked for perfection but for adequacy, completeness, and a good faith effort at full disclosure.”

Under CEQA (PRC Section 21002.1[a]):

“The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.”

As previously discussed in Chapter 1.0, Executive Summary, an EIR is the most comprehensive form of environmental documentation identified in CEQA and the *State CEQA Guidelines* and provides the information needed to assess the environmental consequences of a proposed project. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

2.3 ENVIRONMENTAL REVIEW PROCESS

CEQA (PRC Section 21000, et seq.), requires that a public agency prepare an EIR when the public agency finds substantial evidence that the project may have a significant effect on the environment (PRC Section 21080 (d)). The basic purposes of CEQA are to:

1. Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities;
2. Identify the ways that environmental damage can be avoided or significantly reduced;

3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

In compliance with the *State CEQA Guidelines*, the City has taken steps to maximize opportunities for the public and other public agencies to participate in the environmental review process. The City conducted the scoping process, issued a Notice of Preparation (NOP) for the proposed project, and determined that an EIR was required to evaluate the potentially significant environmental effects of the proposed project and related actions. In addition, a public scoping meeting was held, as discussed further below.

2.3.1 Initial Study and Notice of Preparation

The City, as the Lead Agency, originally prepared an Initial Study (IS) and issued an NOP of an EIR on November 12, 2020.

The State Clearinghouse (SCH) issued a project number for the EIR (SCH No. 2020110212). The primary purpose of preparing the IS was to scope the environmental analysis and describe potential environmental impacts that may result from project approval. The IS was also used to scope out environmental issues that were determined to be “less than significant” or “no impact.”

In accordance with the *State CEQA Guidelines*, Section 15082, the NOP was circulated to responsible agencies and individuals from November 12, 2020, to January 15, 2021, for a period of 63 days, during which time written comments were solicited pertaining to environmental issues and topics that the EIR should evaluate.

Responses to the IS/NOP were received from the following agencies/districts:

- United States Fish and Wildlife Service
- California Department of Fish and Wildlife
- California Department of Conservation (DOC)
- California Department of Transportation District 7
- Los Angeles County Sanitation Districts
- Native American Heritage Commission
- South Coast Air Quality Management District
- Abalone Cove Landslide Abatement District
- Palos Verdes Peninsula Land Conservancy

2.3.2 Scoping Summary

The City held a public scoping meeting on Saturday, December 19, 2020, at 12:30 p.m. to present the proposed project and solicit input from interested individuals regarding environmental issues that should be addressed in the Draft EIR. The scoping meeting was held in a hybrid format (in-

person and virtual). The in-person location of the meeting was Hesse Park, McTaggart Hall. Key environmental issues and concerns raised in the response to the IS/NOP scoping process included:

- **Aesthetics:** Impacts to the viewshed due to loss of native plant communities. Changes to the viewshed due to implementation of project features.
- **Project Description:** Implementation of the project components after field testing. Expansion of the project boundary to include existing retention/catch basins and nearby complicated geology. Provide for alternative construction sequencing of hydraugers. Provide for a second culvert beneath Palos Verdes Drive South. Expand the scope to include possible use of filler materials other than fly ash.
- **Biological Resources:** Protection of natural resources occurring on the site. Ensuring project implementation is consistent with the City's Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Impacts to habitat within the City-owned Palos Verdes Nature Preserve must be avoided and minimized consistent with Section 5.5 of the NCCP/HCP. Ensuring appropriate definition of temporary and permanent impacts to native vegetation and clear definition of how project components could hinder restoration of native habitat. Introduction of impervious surfaces into a natural landscape and the fracture filling may alter surface flow patterns and lead to localized erosion around the filled fractures, which may damage surrounding vegetation.
- **Geology:** Provide a discussion of the geology and geologic structure underlying the Portuguese Bend Landslide Remediation Project, including a description of rock types and a thorough characterization of the Portuguese Bend Landslide Complex.
- **Hydrology and Water Quality:** Swale design and type of material used to fill fractures. Discuss current groundwater levels, historic fluctuations, and sources of surface water infiltration and subsurface recharge. Address the feasibility of gravity flow of stormwater from the proposed retention basin through the Palos Verdes Drive South culvert. Address natural low spots where stormwater runoff naturally accumulates.
- **Recreation:** Trail access during project implementation and trail connectivity after improvements have been installed. Consideration of prior trail planning and protecting existing trail network. Integrate swales with existing trails.
- **Tribal Cultural Resources:** Information related to Native American consultation, as required by Assembly Bill (AB) 52 and Senate Bill (SB) 18, was provided.
- **Utilities and Service Systems:** Concerns regarding potential impacts to sewer lines.

Please note that this is not an exhaustive list of areas of controversy, but rather key issues that were raised during the scoping process. The Draft EIR addresses each of these areas of concern in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate

potentially significant impacts. Appendix A includes the IS/NOP and copies of written comments received in response to the IS/NOP.

2.3.3 Public Review Period

This Draft EIR is being distributed to numerous public agencies and other interested parties for review and comment. The Draft EIR is also available at the following locations and on the City's website:

City of Rancho Palos Verdes
Public Works Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, California 90275
Hours: Monday through Thursday, 7:30 a.m. to 5:30 p.m.
Friday, 7:30 a.m. to 4:30 p.m.
Saturday and Sunday, Closed

Palos Verdes Library District – Miraleste Library
29089 Palos Verdes Drive East
Rancho Palos Verdes, California 90274
Hours: Monday through Thursday, 10:00 a.m. to 6:00 p.m.
Friday, 2:00 p.m. to 6:00 p.m.
Saturday, 10:00 a.m. to 5:00 p.m.
Sunday, Closed

Palos Verdes Library District – Peninsula Center Library
701 Silver Spur Road
Rolling Hills Estates, California 90274
Hours: Monday through Thursday, 10:00 a.m. to 8:00 p.m.
Friday, 2:00 p.m. to 6:00 p.m.
Saturday, 10:00 a.m. to 5:00 p.m.
Sunday, 1:00 p.m. to 5:00 p.m.

All comments received from agencies and individuals on the Draft EIR will be accepted during the public review period, which will not be less than 60 days, in compliance with CEQA. All comments on the Draft EIR should be sent to the following City contact person:

Ron Dragoo
City of Rancho Palos Verdes
Public Works Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, California 90275
Phone: (310) 544-5252
Email: publicworks@rpvca.gov

2.4 SCOPE OF THIS DRAFT EIR

As required by *State CEQA Guidelines* Section 15128, this Draft EIR must identify the effects of the proposed project determined to be significant. Per *State CEQA Guidelines* Section 15060, the City determined that the proposed project may have a significant impact on the environment and an EIR would clearly be required for the proposed project, and the EIR process was initiated. As explained in Section 2.2.1, above, the City issued an NOP soliciting comments from Responsible and Trustee Agencies and other interested parties, including members of the public.

The thresholds of significance criteria utilized in this Draft EIR are based on Appendix G of the *State CEQA Guidelines*. All environmental topics contained in the Appendix G Checklist are addressed in this Draft EIR: aesthetics, agriculture and forest resources (refer to the discussion below in Section 2.5.1, Agriculture and Forest Resources), air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources (refer to the discussion below in Section 2.5.2, Mineral Resources), noise, population and housing (refer to discussion below in Section 2.5.3, Population and Housing), public services (refer to the discussion below in Section 2.5.4, Public Services), recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire. The analysis herein determines whether there are no impacts, less than significant impacts, less than significant impacts with mitigation, or significant and unavoidable impacts associated with the proposed project. Mitigation measures are proposed where feasible to reduce or eliminate identified impacts.

2.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

As required by *State CEQA Guidelines* Section 15128, this Draft EIR identifies the potential effects of the proposed project that were determined not to be significant and adverse and, therefore, are not addressed in the Draft EIR. The proposed project would not result in adverse impacts related to agriculture and forestry resources, mineral resources, population and housing, and public services. These issues are briefly discussed below along with the substantiation for why they were determined not to be significant.

2.5.1 Agriculture and Forestry Resources

According to the General Plan Land Use Element, Section 4.5, there are no land uses designated for agriculture. However, noncommercial agriculture use is permitted in all single-family residential and certain open space land use designations. The General Plan Land Use Element designations within the project site consist of Residential (1–2 dwelling units per acre) and Open Space to the north, east, west, and southeast; and Open Space-Preservation (OSP) and Open Space-Hazard (OSH) to the south and southwest (City of Rancho Palos Verdes 2018a). The project site is zoned as Open Space-Hazard (OH), with a portion zoned as Residential Single Family. Portions of the project site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and its OC-3 Urban Design Overlay Control District to the southwest and southeast. The project site is listed as an area that falls outside of the Natural Resources Conservation Service (NRCS) soils survey area, not mapped by the Farmland Mapping and Monitoring Program (FMMP) (DOC 2016). This site is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. None of the lands on the project site are subject to Williamson Act Contracts. The project site does not contain

forest land. Therefore, there would be no impacts to important farmland or forest land, and no further discussion is required.

2.5.2 Mineral Resources

The General Plan Conservation and Open Space Element, Section 3.3, Mineral Resources, states that the City no longer has any mineral resources that are economically feasible for extraction (City of Rancho Palos Verdes General Plan 2018a). Additionally, the DOC notes that there are no active mining operations, no land designated with soils known to contain mineral resources, and no land classified as MRZ-2 within the entire city of Rancho Palos Verdes (California Geological Survey 2010). There are no active or abandoned wells within or near the project site (DOC 2020). Therefore, no impact to the loss of a known mineral resource would occur, and no further discussion is required.

2.5.3 Population and Housing

The proposed project would control the existing Rancho Palos Verdes Landslide Complex area. Construction would require employees that would likely come from the existing employment population. The proposed project would not directly or indirectly induce population growth. The project site contains several single-family residences; however, the proposed project involves controlling the existing slopes and would not demolish or displace any of these houses. No impacts would occur, and no further analysis is required.

2.5.4 Public Services

The proposed project would not result in an increase in population and thus would not generate a need for new or altered fire or police protection facilities. The proposed project would be constructed in accordance with all applicable fire codes set forth by the State Fire Marshall and Los Angeles County Fire Department. The proposed project would not induce employment or population growth, either directly or indirectly, and would therefore not increase the demand for schools in the area. The proposed project would not generate residents who would increase the demand for park facilities or other public facilities. No impacts would occur, and no further discussion is required.

2.6 FORMAT OF THE EIR

Pursuant to *State CEQA Guidelines* Section 15120(c), this Draft EIR contains the information and analysis required by Sections 15122 through 15131 of the *State CEQA Guidelines*. Each of the required elements is covered in one of the Draft EIR chapters described below.

2.6.1 Chapter 1.0: Executive Summary

Chapter 1.0 contains the Executive Summary of the Draft EIR, listing all significant project impacts, mitigation measures that have been recommended to reduce any significant impacts of the proposed project, and the level of significance of each impact following mitigation. The summary is presented in a table format.

2.6.2 Chapter 2.0: Introduction

Chapter 2.0 contains a discussion of the purpose and intended use of the Draft EIR.

2.6.3 Chapter 3.0: Project Description

Chapter 3.0 includes discussion of the proposed project's geographical setting; the project site's previous uses; and the proposed project's goals, objectives, characteristics, components, construction phasing, and anticipated discretionary actions and permits for the project.

2.6.4 Chapter 4.0: Environmental Analysis, Impacts, and Mitigation Measures

Chapter 4.0 includes an analysis of the proposed project's environmental impacts. It is organized into the following topical sections (Sections 4.1 through 4.16): aesthetics, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire. The environmental setting discussions describe the "existing conditions" of the environment in the planning area and in the vicinity of the site as they pertain to the environmental issues being analyzed (Section 15125 of the *State CEQA Guidelines*).

The project impact discussions identify and focus on the significant environmental effects of the proposed project. The direct and indirect significant effects of the proposed project on the environment are identified and described, giving due consideration to both the short-term and long-term effects, as necessary (Section 15126.2[a] of the *State CEQA Guidelines*).

Chapter 4.0 also includes a discussion of the cumulative effects of the proposed project within the analysis of each environmental topic. As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area. Cumulative impacts are based on the build out of the project and are discussed relative to the cumulative study area as identified for each environmental topic.

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen significant adverse impacts for each significant environmental effect identified in the Draft EIR (Section 15126.4 of the *State CEQA Guidelines*). The levels of significance before and after mitigation are provided. Unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to less than significant levels.

2.6.5 Chapter 5.0: Alternatives to the Proposed Project

In accordance with *State CEQA Guidelines* Section 15126.6, the alternatives discussion in Section 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the proposed project and that are capable of eliminating or reducing any significant adverse environmental effects.

2.6.6 Chapter 6.0: Other CEQA Considerations

Chapter 6.0 includes CEQA-mandated discussions on the following topics as required by Section 15126 of the *State CEQA Guidelines*: (1) significant irreversible environmental changes that would result from implementation of the proposed project; (2) significant adverse environmental impacts

for which either no mitigation or only partial mitigation is feasible; and (3) growth-inducing impacts of the proposed project.

2.6.7 Chapter 7.0: Mitigation Monitoring and Reporting Program

PRC Section 21081.6 requires that agencies adopt a mitigation monitoring and reporting program for any project for which findings have been made pursuant to PRC Section 21081. Chapter 7.0 provides a list of all proposed project mitigation measures, defines the party responsible for implementation of those measures, and identifies the timing for implementation of each measure.

2.6.8 Chapter 8.0: List of Preparers and Persons Consulted

Chapter 8.0 provides a list of the Draft EIR preparers, technical report authors, and other experts included in the preparation of the Draft EIR and the organizations and persons consulted during preparation of the Draft EIR.

2.6.9 Chapter 9.0: References

Chapter 9.0 provides the references used in this Draft EIR.

2.7 INCORPORATION BY REFERENCE

As permitted in Section 15150 of the *State CEQA Guidelines*, an EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. Information from the documents that have been incorporated by reference has been briefly summarized in the appropriate sections of this Draft EIR, along with a description of how the public may obtain and review these documents. These documents include:

- City of Rancho Palos Verdes General Plan Elements (as amended) (available online at: <https://www.rpvca.gov/DocumentCenter/View/12625/2018-General-Plan>)
- City of Rancho Palos Verdes Municipal Code and other titles referenced herein (available online at: <http://www.rpvca.gov/289/Building-Safety>)

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3.0 PROJECT DESCRIPTION

This Draft Environmental Impact Report (EIR) has been prepared to evaluate the environmental impacts that may result from implementation of the proposed Portuguese Bend Landslide Remediation Project (proposed project). As Lead Agency, the City of Rancho Palos Verdes (City) has the authority for preparation of this Draft EIR. After the comment/response process, certification of the Final EIR and approval of the proposed project, as described in this Draft EIR, may be considered by the City Council. The City and Responsible Agencies have the authority to make decisions on discretionary actions related to the approval of the proposed project. This Draft EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. This Draft EIR evaluates for a reasonable worst-case scenario of potential environmental impacts associated with the proposed project and provides mitigation where necessary.

This Project Description provides a detailed understanding of the proposed project evaluated in this EIR. The project's background, location, site characteristics, and objectives are described below, followed by a description of the proposed project, a discussion of its construction components, and a summary of the approvals required for implementation of the proposed project. Additional descriptions of the environmental setting as it relates to each of the environmental issue areas analyzed in this EIR are included in the environmental setting discussion contained within Chapter 4.0, Environmental Setting. This information is provided pursuant to *California Environmental Quality Act (CEQA) Guidelines* Section 15124.

3.1 PROJECT BACKGROUND AND PURPOSE

The Portuguese Bend Landslide (PBL), a component of the City's ancient Landslide Complex, is an ancient landslide mass that shows possible signs of movement as far back as 120,000 to 800,000 years ago (City of Rancho Palos Verdes 2018g). In more recent times, the landslide was reactivated during the 1950s when the County of Los Angeles (County) was constructing an extension to Crenshaw Boulevard with the goal of extending the road down the south side of the Palos Verdes Hills to an intersection with Palos Verdes Drive South. A small landslide was triggered in 1956 (City incorporation was in 1973) during the road construction, and approximately 160,000 cubic yards of material was removed and placed at the head of the PBL (City of Rancho Palos Verdes 2018g). At the time of the Crenshaw Road extension project, the houses in the area were using septic waste systems that recycled household water into the subsurface, and neighborhoods did not have storm drains. As a result, these factors, among other things, contributed to groundwater recharge in the PBL area by the time the road construction began. The increased pore water pressure that resulted from elevated groundwater levels was determined to be a significant factor contributing to landslide movement in the PBL area (City of Rancho Palos Verdes 2018g).

Since the reactivation in 1956, the PBL has moved at various rates and has become one of the largest continuously active landslides in the United States. Horizontal displacement of over 8.5 feet per year has been measured within the eastern and seaward subslides (City of Rancho Palos Verdes 2018g). The continued land movement has resulted in significant damage to homes, moving some of them by hundreds of feet onto other properties. It has also resulted in damage to utilities and

roadways, including Palos Verdes Drive South, a major transportation route, and to a sanitary sewer trunk line serving tens of thousands of residents of the Palos Verdes Peninsula.

Sudden and major land movement, which has previously occurred in nearby landslides, has the potential to cause a roadway closure on Palos Verdes Drive South due to roadway failure. Closing Palos Verdes Drive South would bifurcate the city, eliminating a major connector and causing a detour of over 15 miles. This would impede evacuations in the event of a wildfire (Palos Verdes Drive South is one of only a few evacuation routes for the entire high-risk Palos Verdes Peninsula). Equally critical is the potential interruption of the sanitary sewer transmission main line, which could force the relocation of tens of thousands of residents from their homes and could adversely impact the local economy with the closure of businesses while repairs are being made. Damage to the sewer main also poses a serious threat to the sensitive Pacific Ocean shoreline ecosystem, including the State-designated Abalone Cove Ecological Reserve, from uncontrolled discharge of untreated sewage.

The City and its citizens are seeking to minimize landslide movement to preserve infrastructure and open lands; preserve natural vegetation and recreational facilities within the Palos Verdes Nature Preserve (Preserve); reduce soil erosion losses; and reduce health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure. Additionally, implementation of the proposed project, which is designed to minimize landslide movement, will provide health and safety benefits to the surrounding residents whose homes are currently subject to continued landslide movement. The City of Rancho Palos Verdes has proactively initiated this EIR to evaluate environmentally sensitive engineering solutions and any additional mitigation required to significantly slow this historic landslide and thus protect the City's neighborhoods and the public.

3.2 PROJECT LOCATION AND SITE CHARACTERISTICS

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the PBL, is the Pacific Ocean, as seen on Figure 3-1, Project Site Location. The proposed project consists of approximately 206 acres within the landslide complex (project site). However, the overall area of land that contributes to the landslide instability is much larger, consisting of approximately 750 acres (Diblee 1999; Douglas 2013; Geo-Logic Associates 2019; Ninyo & Moore 2022). The project site includes approximately 104 acres of land located within the City-owned Preserve, specifically within the Portuguese Bend and Abalone Cove Reserves, as shown on Figure 3-2, Palos Verdes Nature Preserve Areas. The habitat manager of the City-owned Preserve is the Palos Verdes Peninsula Land Conservancy (PVPLC), pursuant to the City Council-adopted Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and Management Agreement.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community Association and the Portuguese Bend Beach Club.

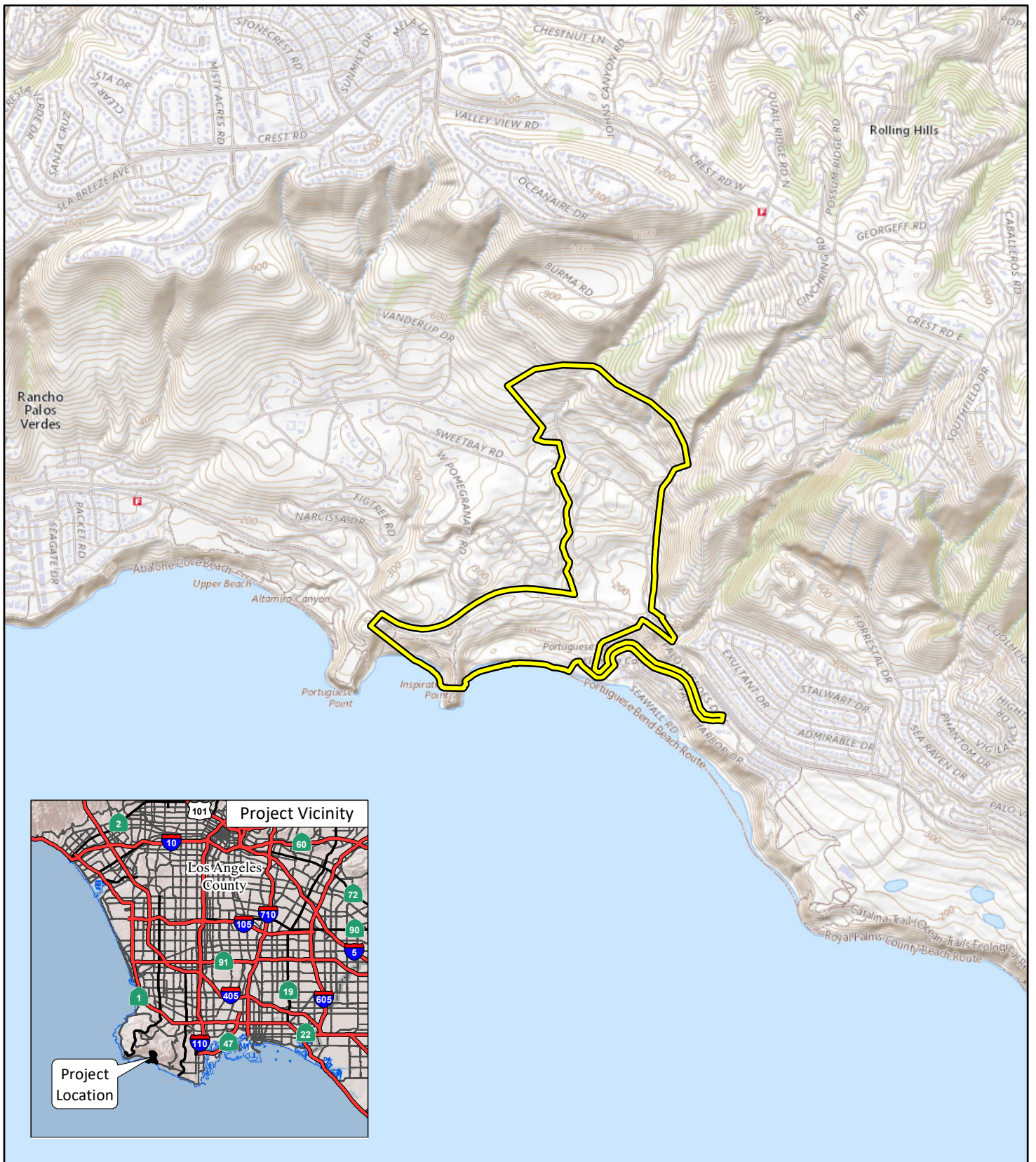


FIGURE 3-1

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LEGEND

 Project Location



0 1000 2000
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SOURCE: USGS The National Map (2018)

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Portuguese Bend Landslide Remediation Project
Project Site Location

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FIGURE 3-2

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LEGEND

- Project Location
- Portuguese Bend Nature Preserve



Portuguese Bend Landslide Remediation Project
Palos Verdes Nature Preserve Areas

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Public trails within the Preserve are located on the eastern side of the project site and on the seaward side of Palos Verdes Drive South. One park—the Abalone Cove Shoreline Park/Reserve—is within the project site boundaries and is also designated as a State Ecological Preserve.

Vegetation consists of 13.58 acres of Saltbrush Scrub, 114.07 acres of Undifferentiated Coastal Sage Scrub, 5.37 acres of *Rhus*-Dominated Coastal Sage Scrub, 32.93 acres of Exotic Woodland, and 11.40 acres of disturbed vegetation (Chambers Group 2022a). Due to the land movement, surface fractures (also known as fissures) exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South.

3.2.1 General Plan Designation/Zoning

The General Plan Land Use Element designations within the project site consist of Residential (1–2 dwelling units per acre) and Open Space to the north, east, west, and southeast; and Open Space Preservation (OSP) and Open Space Hazard (OSH) to the south and southwest (City of Rancho Palos Verdes 2018c), as shown on Figure 3-3, Land Use Designations.

The project site is primarily zoned as Open Space - Hazard (OSH), with a portion zoned as Residential Single Family - lot less than 20,000 square feet (RS-2) to the southeast (City of Rancho Palos Verdes 2011), as shown on Figure 3-4, Zoning. Portions of the project site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast.

The portion of the project site seaward of Palos Verdes Drive South is located within the Coastal Specific Plan Area and is designated as mostly Hazard Area and partially as Agricultural Area (City of Rancho Palos Verdes 1978), as shown on Figure 3-5, Coastal Specific Plan.

3.3 PROJECT OBJECTIVES

The fundamental purpose of the proposed project is to minimize landslide movement in the PBL area. Specific objectives related to this fundamental purpose include:

- Identifying geotechnical engineering solutions that are environmentally sensitive, will substantially reduce the risk of damage to public and private property (including residences), and would allow for the significant improvements of roadway and infrastructure, safety, and stability projects
- Reducing substantial human health risk and improving public safety
- Reducing the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts
- Reducing the likelihood of major landslide movement that would damage and render a major arterial street, Palos Verdes Drive South, unusable, potentially leading to major detours, additional vehicle emissions associated with additional miles traveled, major disruptions to

traveling motorists, and loss of productivity throughout the city of Rancho Palos Verdes and its surrounding communities

- Reducing the likelihood of surface fractures that would damage and fragment sensitive species habitat, thereby enhancing native vegetation in the Preserve
- Alleviating artesian water pressure below the PBL area, which is believed be a major contributing factor to landslide movement and controlling major surface water runoffs
- Reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean that contribute to negative impacts on the coastal and marine environments
- Selecting remedy options that are consistent with the natural visual characteristics of the surrounding Preserve

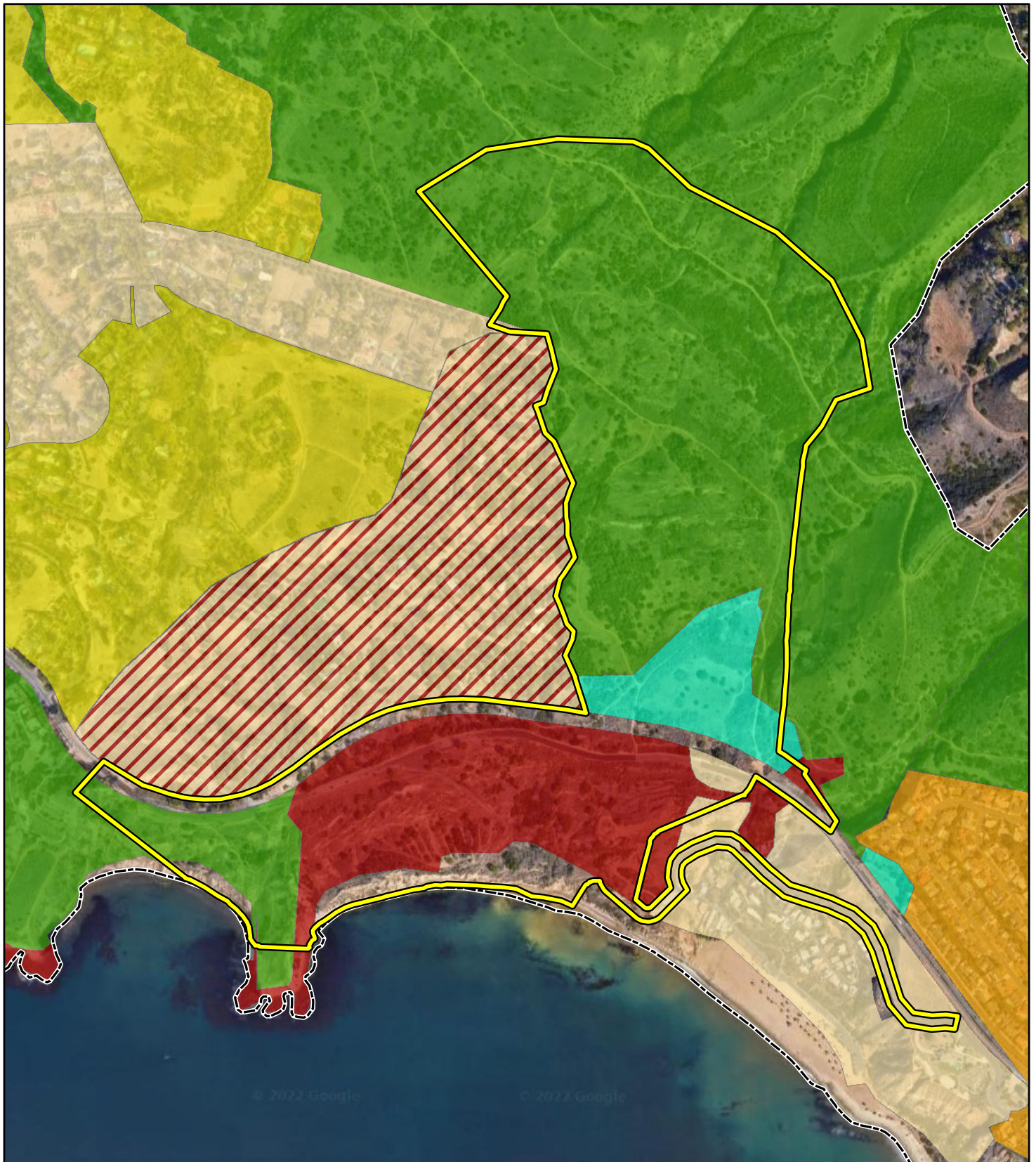
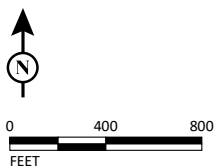


FIGURE 3-3

LSA

LEGEND

- | | |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|  Project Location |  Recreational Passive |
|  City Boundary |  Residential 1-2 DU/Acre |
| Land Use Designations | |
|  Open Space Hazard |  Residential 1-2/Open Space |
|  Open Space Preserve |  Residential 2-4 DU/Acre |
| |  Residential <= 1 DU/Acre |



Portuguese Bend
Landslide Remediation Project
Land Use Designations

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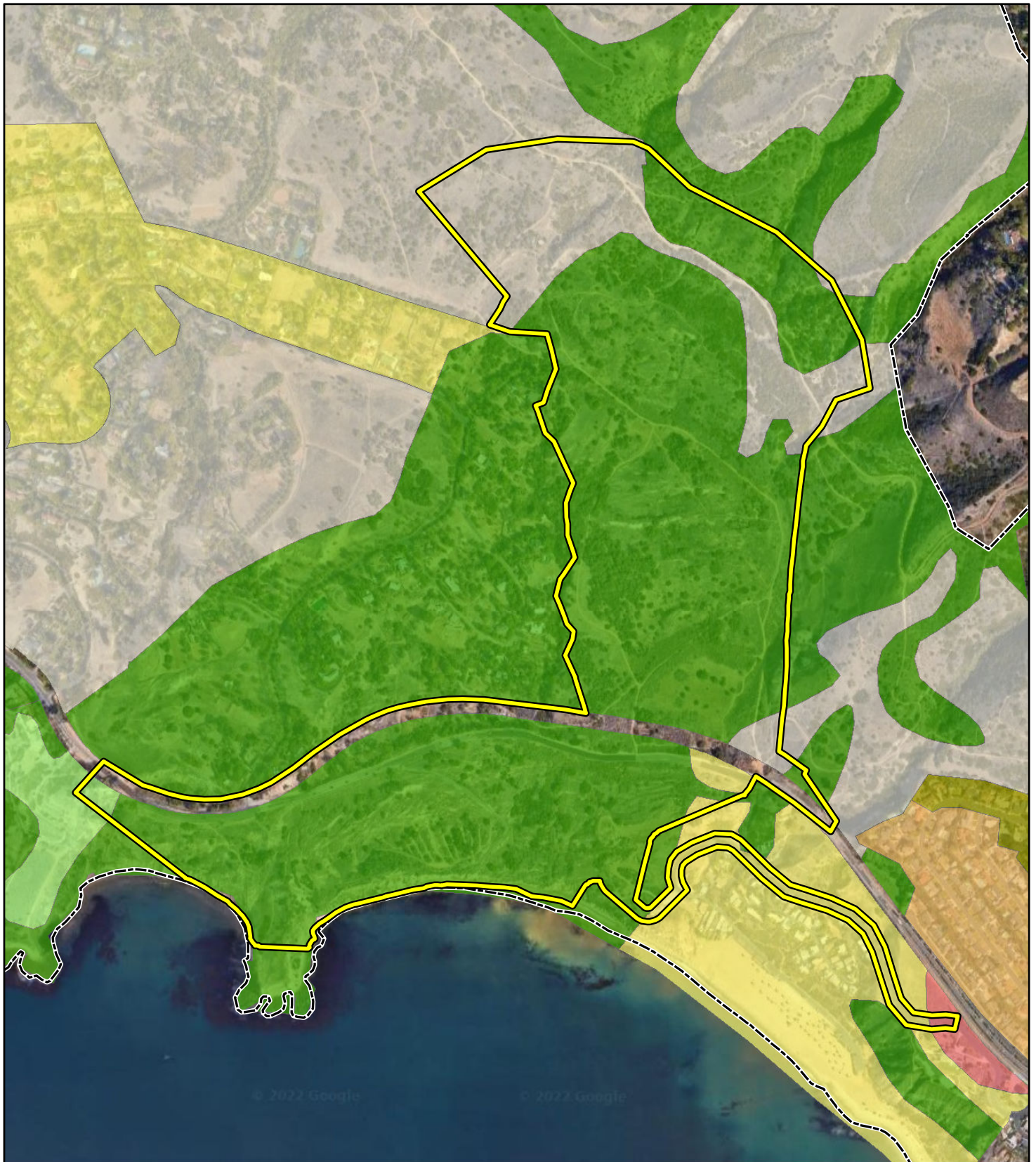


FIGURE 3-4

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LEGEND

Project Location

City Boundary

Zoning

Open Space - Hazard

Open Space - Recreational

Residential Single - Lot > 8;000 Square Feet

Residential Single - Lot > 10;000 Square Feet

Residential Single - Lot > 13;000 Square Feet - Lot > 20;000 Square Feet

Residential Single - Lot > 1 Acre

Residential Single - Lot > 20;000 Square Feet



SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)

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Portuguese Bend
Landslide Remediation Project
Zoning

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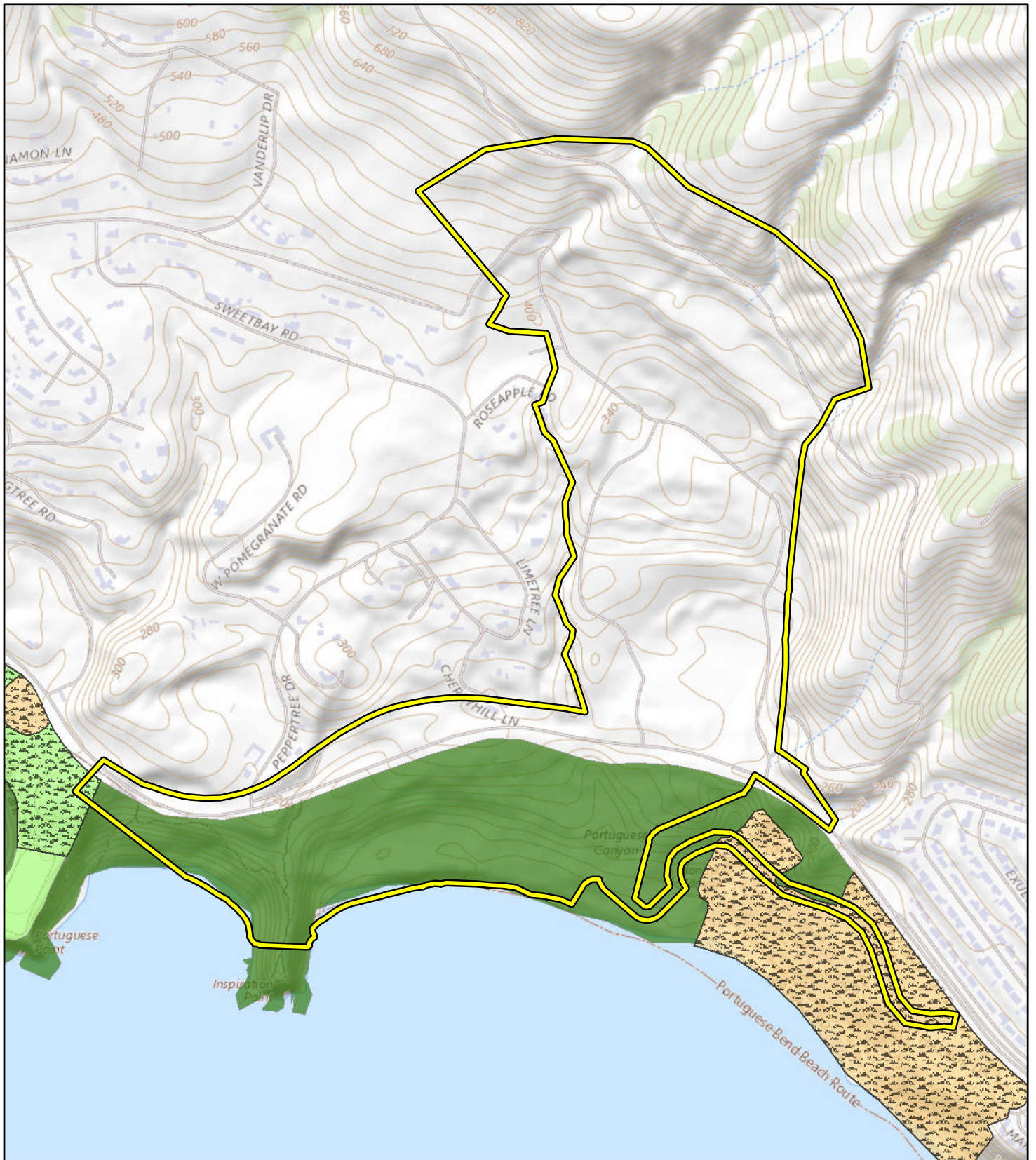







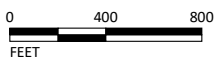


FIGURE 3-5

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LEGEND

-  Project Location
-  Coastal Specific Plan
-  Hazard Area
-  Parkland
-  Residential - < 1 d.u./acre
-  Control Districts
-  Natural



Portuguese Bend Landslide Remediation Project
Coastal Specific Plan

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3.4 PROJECT ELEMENTS

The proposed project is intended to significantly minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. Thus, the proposed improvements include infilling surface fractures to reduce infiltration of surface water into the ground; constructing surface swales and retention areas to collect, slow, and convey surface water to the ocean; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass. Each project element is described in greater detail below.

3.4.1 Surface Fracture Infilling

PBL movement is manifested, in addition to lateral displacement, by surface settlement and cracking. Multiple fractures are present, and most are observable throughout the project site. A surface fracture can be defined as a long, narrow crack opening observable at the ground surface. Surface fractures are induced by landslide movement and, once formed, can be extended and eroded by stormwater runoff. They can be hazardous to people living on or near the affected surfaces and damaging to property and infrastructure, as well as to the general public visiting the area and utilizing the trails in the Preserve. The existing surface fractures within the project site are a few feet wide, and some are as deep as 15 or more feet. These fractures collect stormwater runoff that discharges into the ground. The stormwater runoff enters the fractures, where it percolates into the ground and becomes part of the groundwater, which exacerbates landslide movement. The surface fracture infilling will control stormwater runoff infiltrating the ground and will help in solving one aspect of the landslide movement.

The infilling of the surface fractures (shown on Figure 3-6, Surface Fracture Infilling Locations) with appropriate materials (such as bentonite chips and/or soil) will minimize direct uncontrolled stormwater infiltration, which currently percolates into the groundwater.

3.4.2 Surface Drains

The proposed project considers installing new surface water improvements and refurbishing existing pipes to minimize the soil erosion loss and stormwater ponding and infiltration that contributes to landslide movement. These improvements are described below and shown on Figure 3-7, Surface Water Improvements.

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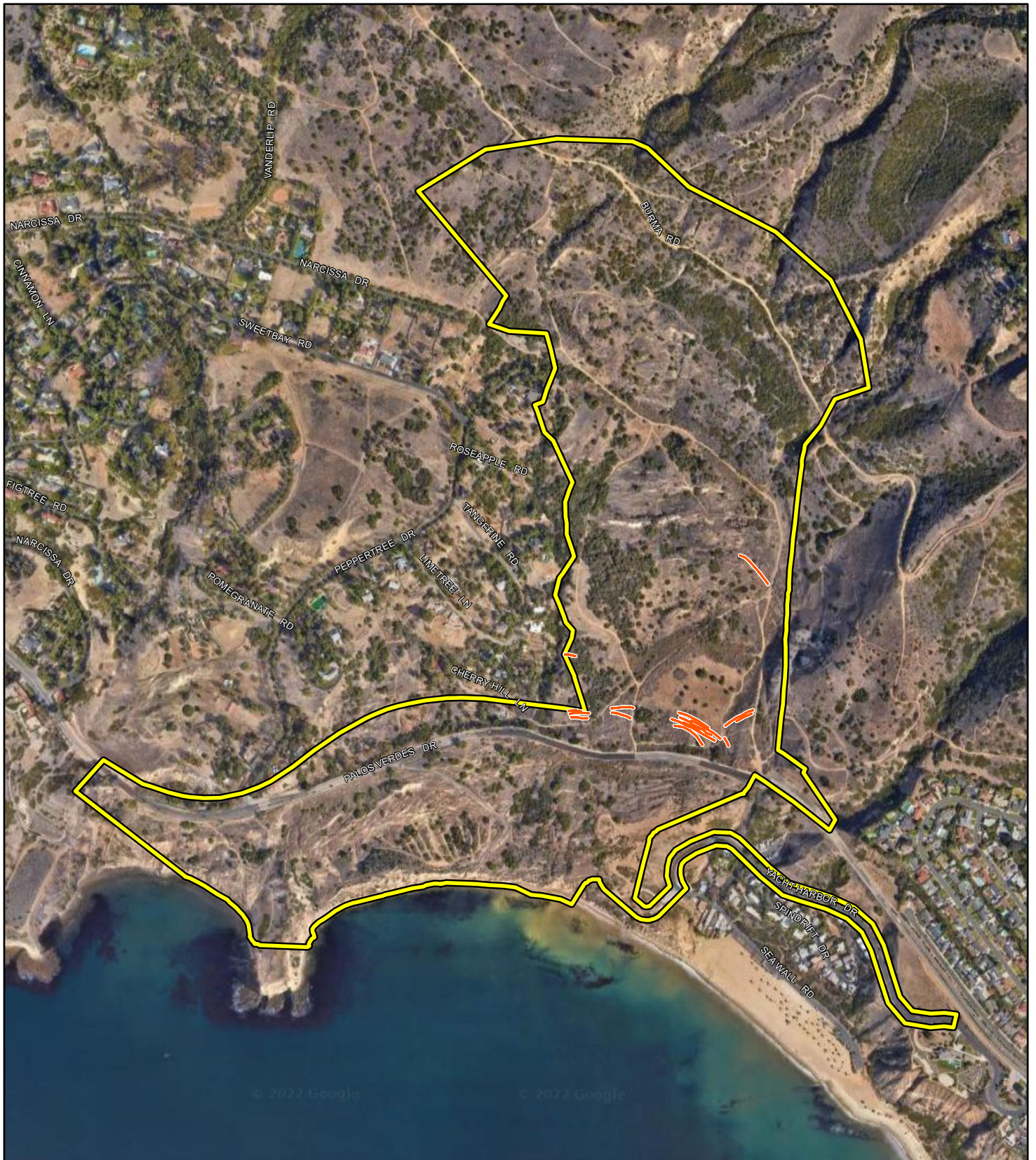


FIGURE 3-6

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LEGEND

- Project Location
- Surface Fracture Infilling Locations



SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)

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Portuguese Bend Landslide Remediation Project
Surface Fracture Infilling Locations





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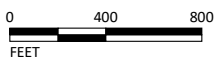


FIGURE 3-7

LSA

LEGEND

-  Project Location
-  Proposed Engineered Swale
-  Flow Reduction Area
-  Underground Pipes



SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)

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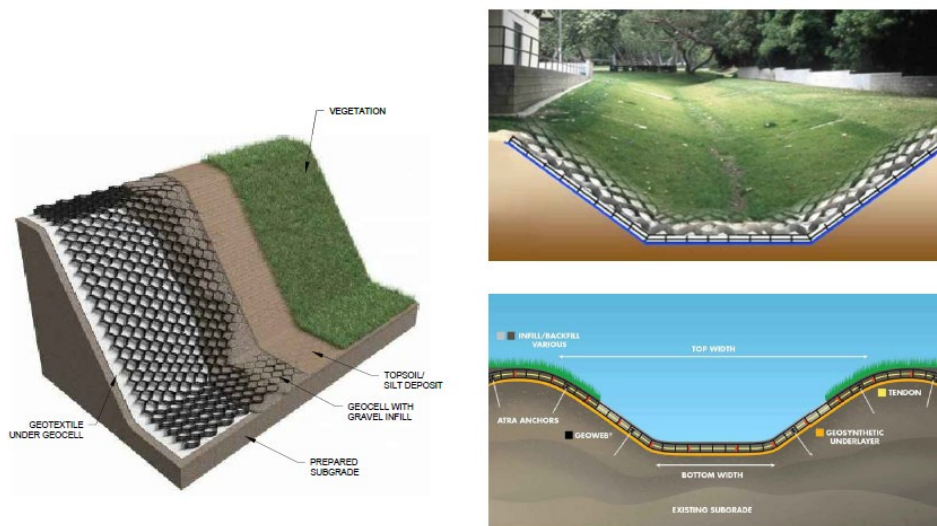
Portuguese Bend Landslide Remediation Project
Surface Water Improvements

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3.4.2.1 Surface Drainage Swales

Swales are designed to manage surface stormwater runoff and can be described as shallow channels with gently sloping sides. The proposed project would install a network of surface drainage swales that extend south from Burma Road and traverse through the project site. The drainage swales have been designed to be vegetated ranging from a width of 2 to 10 feet at the bottom and a width of 14 to 26 feet at the top. The surface drainage swales would convey surface runoff from the northern limits of the project site, connect to a new flow reduction area, and travel south underneath Palos Verdes Drive South to the Pacific Ocean. The surface drainage swales would be designed to be visually complementary to the surrounding setting of the Preserve and lined with context-sensitive vegetation instead of concrete. Erosion control measures, such as geocells and/or riprap, as shown on Figure 3-8, will be implemented within swales. The designs will be consistent with restoration requirements outlined in the City's NCCP/HCP and other resource/regulatory review requirements. The swales will be planted with native vegetation, the Palos Verdes Land Conservancy will be consulted regarding the plant palette along with the source of plants/seeds.

Figure 3-8: Surface Drainage Swale Concept



Source: Engineered Swale Details (Geo-Logic Associates 2019)

3.4.2.2 Flow Reduction Area

A flow reduction area is a detention basin that helps manage the flow of excess stormwater runoff. These areas allow large flows of water to enter but limit the outflow through a small opening. The proposed project would install one permanent bentonite-lined flow detention basin that would be approximately 10 acres in size. It would be located approximately 250 feet north of Palos Verdes Drive South, within the project limits, and would connect to the drainage surface swales. The flow reduction area would primarily prevent percolation but will release stormwater at a gradual rate, slowing the flow and allowing fine particles of soil to settle within the flow reduction area, resulting

in sediment-free water exiting the flow reduction area and routing through an existing 60-inch pipe that runs under Palos Verdes Drive South before being conveyed into the Pacific Ocean. It will be designed to use gravity flow only, and no pumps are planned. It is anticipated that stormwater would accumulate in the detention basin only for a period of several hours or less than 1 day once rain stops. Due to its short duration, the additional weight would not have a substantial effect on landslide stability; however, regular maintenance would be needed to remove fine soil particles. The flow reduction area will be planted with native vegetation. The PVPLC will be consulted regarding the plant palette along with the source of plants/seeds.

3.4.2.3 Underground Pipes

Installation, replacement, and refurbishment of underground piping to properly convey stormwater runoff will be required throughout the project site. This includes installing a new, durable 36-inch-diameter pipe beneath Burma Road; replacing an existing and deteriorating 36-inch-diameter plastic pipe located south of Palos Verdes Drive South with a 60-inch-thick wall or high-density polyethylene (HDPE) pipe; and refurbishing an existing 60-inch-diameter pipe beneath Palos Verdes Drive South. The intent of this environmentally sensitive solution is to utilize the footprint of the existing pipes and add pipes with the least impact on the affected areas.

3.4.2.4 Subsurface Drainage System

A groundwater extraction system of horizontal pipes, or “hydraugers,” would be installed to alleviate artesian water pressure below the PBL, which is believed to be the main contributor to landslide movement. The approximate locations of the hydraugers are shown on Figure 3-9, Hydrauger Locations. Where possible, hydraugers would be installed below the side plane to avoid shearing off by landslide movement. Water will exit by controlled pressure flow and/or gravity flow and will be routed through a storm drain system into the Pacific Ocean. The two hydraugers located within the northern portion of the project site (A2 and A3) will be installed horizontally, beneath the active movement zone of the landslide. The horizontal hydraugers are advanced on a slightly upward slope to promote gravity flow to alleviate artesian water pressure underground. The other three hydraugers in the southern portion of the project site (A1, A5, and A6) will be installed directionally (following the contour of the basal sliding plane). An example of a landslide mitigation by system of hydraugers is shown on Figure 3-10. Within the PBL, the hydraugers will be installed sequentially, in fan-shaped patterns. They will extend within City-owned right-of-way or property. The ultimate size of the hydraugers would depend on field conditions (groundwater yield). Depending on site conditions, hydrauger length might reach up to 1,200 feet with a diameter of up to 6 inches. The hydrauger depth will vary, with the deepest points reaching up to 400 feet below ground surface.



FIGURE 3-9

LSA

LEGEND

- Project Location
- Drilling
- Hydrauger Locations
- Work Area
- Directional
- Horizontal

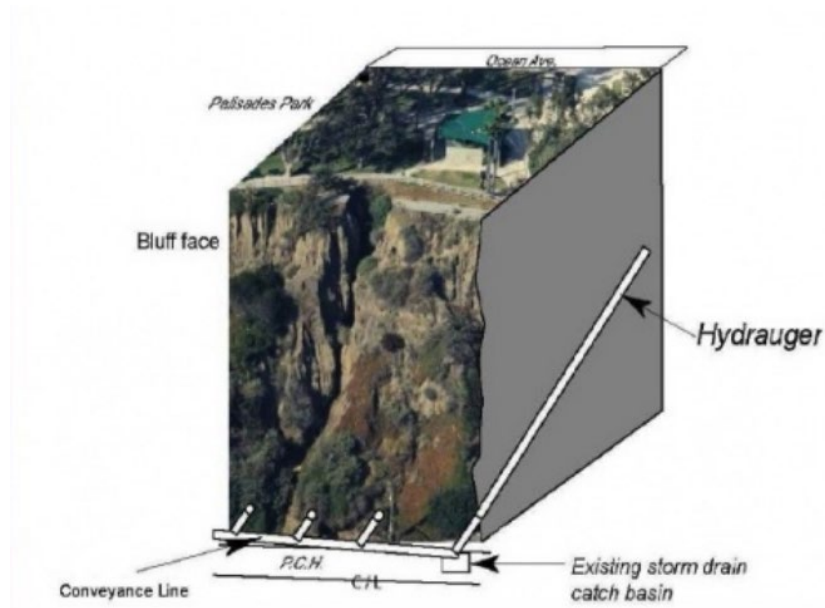


SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)
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Portuguese Bend Landslide Remediation Project
 Hydrauger Locations

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Figure 3-10: Example of Landslide Mitigation with a System of Horizontal Hydraulics



Source: Hydraulics/Horizontal Drains (Rogers 2022)

Water collected through the array pipes would be emptied and collected into water storage tanks stationed adjacent to the hydraulics. Collected water will be tested for water quality, including sedimentation and turbidity. Upon review of test results, it will be discharged to the ocean or used for other purposes, such as within the Preserve or other areas of the city, as appropriate. It is anticipated that the number of water storage tanks would range from a minimum of one tank and up to five tanks. The exact number, locations, and types of tanks will be determined during final design. Each tank will operate on site for up to 3 years, requiring routine maintenance to periodically drain sediment buildup inside the tanks.

Three types of tanks will be considered: (1) aboveground (vertical); (2) aboveground (horizontal); and (3) underground.

Each aboveground (vertical) water storage tank would be approximately 10 feet in outer diameter by 13 feet high. Figure 3-11 provides an example of an aboveground (vertical) water storage tank.

Figure 3-11: Example of an Aboveground (Vertical) Water Storage Tank



Source: Portuguese Bend Geotechnical Evaluation Report (Geo-Logic Associates 2019a)

For the aboveground (horizontal) design option, each tank would be approximately 10 feet in outer diameter by 10 feet high. Figure 3-12 provides an example of an aboveground (horizontal) water storage tank.

Figure 3.12: Example of an Aboveground (Horizontal) Water Storage Tank



Source: Email Correspondence with Geo-Logic Associates (Geo-Logic Associates 2022)

Both aboveground tank options (vertical and horizontal) can be painted in color schemes that are visually complimentary to the surrounding setting of the Preserve. Opportunities to physically screen the aboveground tanks; to construct underground tanks (discussed in more detail below); and/or, if water quality allows, for direct discharge of collected water will also be explored.

For the underground design option, each tank would be approximately 8 feet in outer diameter, 8 feet high, and 24 feet long. Figure 3-13 provides an example of an underground water storage tank.

Figure 3.13: Examples of Underground Water Storage Tanks



Source: Email Correspondence with Geo-Logic Associates (Geo-Logic Associates 2022)

During final design, options will be considered to potentially combine the types of tanks required on site in addition to considering only one of the three types of tanks discussed above.

3.4.3 Project Construction

The proposed project would construct the improvements depending on factors such as funding. The construction may occur separately by component or concurrently. The construction components are as follows.

3.4.3.1 Construction Component I: Surface Fracture Infilling

The surface fracture infilling activities shown on Figure 3-6 are proposed to be performed. The fractures identified on Figure 3-6 would be infilled with appropriate materials such as bentonite chips and/or soil. This type of infill has been used successfully at other sites impacted by landslides, such as cut slopes at the Sunshine Canyon Landfill in Los Angeles. A key advantage of this material is its ability to deform and maintain a seal if a crack continues to develop after infilling.

After the initial fracture infilling event, periodic monitoring of the filled fractures will be performed to observe if repaired fractures open in the future at these locations due to ongoing landslide

movement. Fractures identified during the field periodic monitoring inspection visits should be infilled again if needed as part of post-construction maintenance that will be implemented by the City.

3.4.3.2 Construction Component II: Surface Water Improvements

The surface water improvements shown on Figure 3-7 are proposed to be installed. The surface water improvements will be constructed with the following components:

- A new 36-inch-diameter pipe below Burma Road will be installed using industry-standard pipe installation techniques such as cut-and-cover or jack-and-bore methods that will be determined during final design.
- An existing 36-inch-diameter plastic pipe located south of Palos Verdes Drive South will be removed and replaced with a new 60-inch-thick-walled, fusion-welded HDPE pipe.
- The existing 60-inch-diameter pipe below Palos Verdes Drive South will be refurbished by cleaning out any debris within the pipe and lining it with smooth polymeric material to prevent leakage. Before the start of construction, the contractor would perform a pipe condition survey to field-verify the existing pipe's location, flowline elevations, diameter, functionality, structural integrity, and remaining useful life.
- Surface drainage swales are designed to be constructed using HDPE erosion-control material called geocell. This material is ultraviolet (UV) light-resistant and durable, thus reducing maintenance costs and efforts. Depending on the water velocity during design in a given section, geocell-lined swales would be infilled by soil, rock, and/or native habitat.
- The flow reduction area will be constructed by first clearing the site through grading and grubbing activities. Excess clean soil will be used to construct berms (mostly along the south end of the flow reduction area). The berms will be constructed as engineered fill and will be lined using the same materials and techniques as for the flow retention area floor.

3.4.3.3 Construction Component III: Hydraulaugers

All five hydraulauger systems will initially include aboveground water storage tanks, but undergrounding will be explored and pursued if deemed feasible during the final design stage. Depending on water quality, including sediment load, these tanks will be either blended into the environment or removed so water directly discharges to a storm drain system to the ocean or to the sewer system.

The hydraulauger systems will be constructed in three sub-phases. The sub-phases generally consist of the following:

1. Preparatory work, including commissioning of more frequent monitoring of landslide movement, installation of vibrating wire piezometers, and development/implementation of a remote sensing system. This step is necessary to adequately monitor the progress of landslide mitigation and to develop and implement corrections if required. Duration: 6 months.
2. Grading of access points and work platforms for upgradient hydraulaugers (hydraulaugers at the top or highest elevations of the project area), installation of upgradient hydraulaugers using the

horizontal drilling technique, and monitoring of the impact of this system on the overall performance of the PBL. If successful, this system will prevent buildup of artesian pressure at the toe of the PBL (i.e., will minimize the impact of the most destabilizing force on the landslide). Duration: 1.5 years (including 1 year of monitoring following construction).

3. Grading of access points and work platforms for downgradient hydraugers (hydraugers at the bottom or lowest elevations of the project area). Installation of these hydraugers will be directional (i.e., they will be drilled below the sliding plane) to relieve artesian pressure at the point it acts on the PBL. Duration: 1.5 years (including 1 year of monitoring following construction). Expected to be concurrent with Construction Component II: Surface Water Improvements, depending on funding.

The pace and sequence of construction within each sub-phase is likely to require adjustment based on field observations. The areas needed for the installation of the hydrauger systems are shown on Figure 3-9, Hydrauger Locations.

An attempt will be made to use the existing access routes for construction equipment, including for drilling rigs. Minimal grading, if any, will be required for placement of aboveground water storage tanks. Drilling mud will be collected and disposed of off site. Flow (and release water pressure at downstream) from hydraugers will be controlled by pressure-control valves. Collected water will be conveyed to tanks through 4-inch-diameter pipes. Both horizontal and directional drilling operations will last 1 to 2 weeks. Depending on the water yield, drillers may return to ream (i.e., increase diameter) the hydraugers or properly close the drilling location(s) if the achieved yield is deemed too low. Figure 3-14, Access Routes, illustrates the location of construction access routes.

Construction of Components I and II would last up to approximately 2 years. The timing and length of construction for Component III would be determined based on the outcome of Components I and II. Construction of Components I, II, and III, including monitoring of vibrating-wire piezometers and surveying, would only occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, with the exception of Saturdays, Sundays, and federal holidays, and in accordance with the City's construction requirements.¹

Three separate staging areas will be utilized to store construction-related equipment and materials (such as construction equipment, construction worker vehicles, construction materials, and stockpiles), as shown on Figure 3-15, Staging Areas. Contractor access is anticipated to be from Palos Verdes Drive South, and the primary staging area for construction equipment and materials will be outside of the Preserve near the proposed detention basin and near the roadway. Construction equipment would primarily utilize existing on-site trails that can accommodate vehicles to access work areas within the project site. Access to one project element (Hydrauger A1) for construction and operation/maintenance will either occur via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community, or internally within the project site. An easement or access agreement will be necessary if the Yacht Harbor access is to be used.

¹ Rancho Palos Verdes Municipal Code Section 17.56.020.

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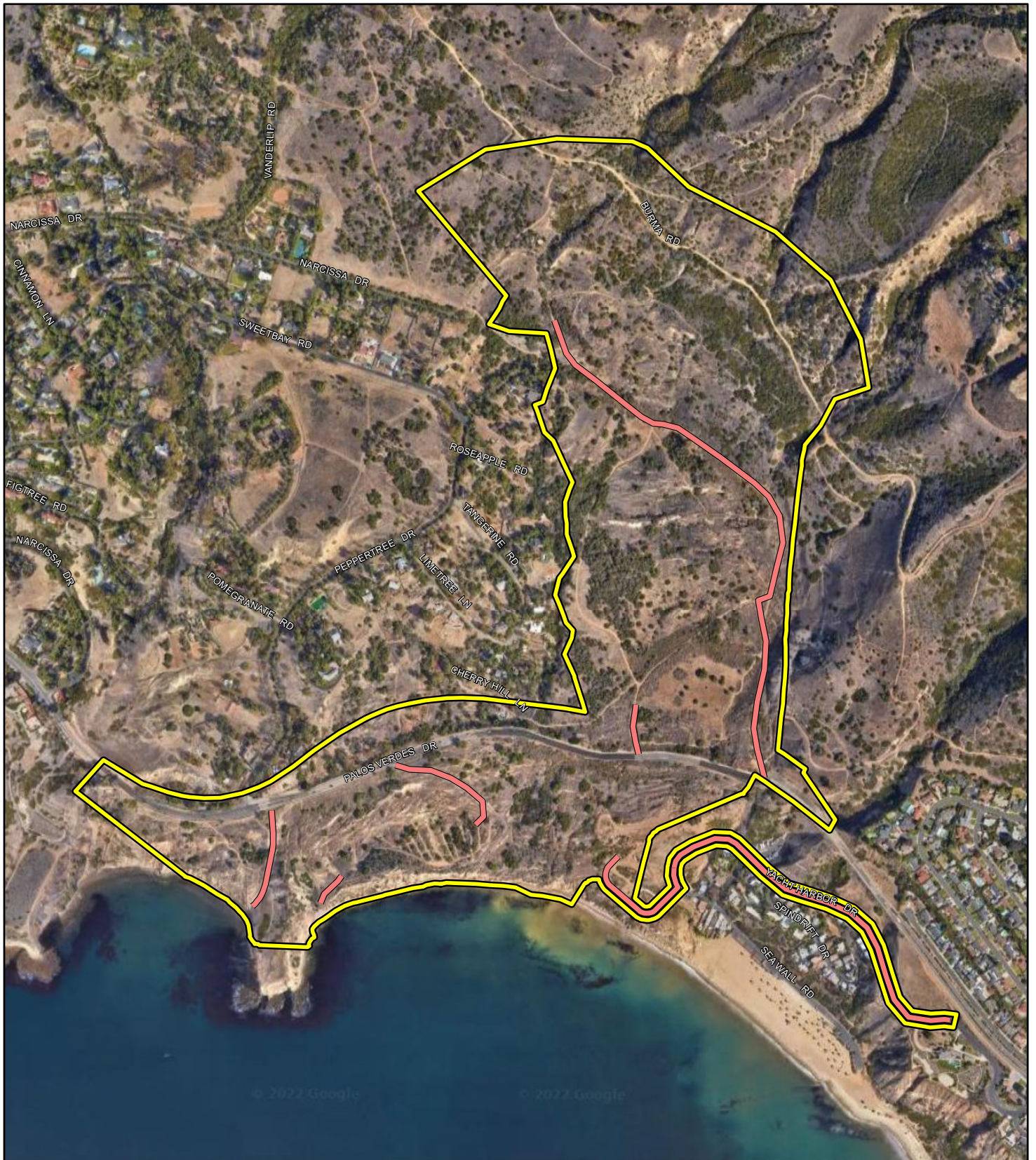


FIGURE 3-14

LSA

LEGEND

- Project Location
- Access Routes



SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)
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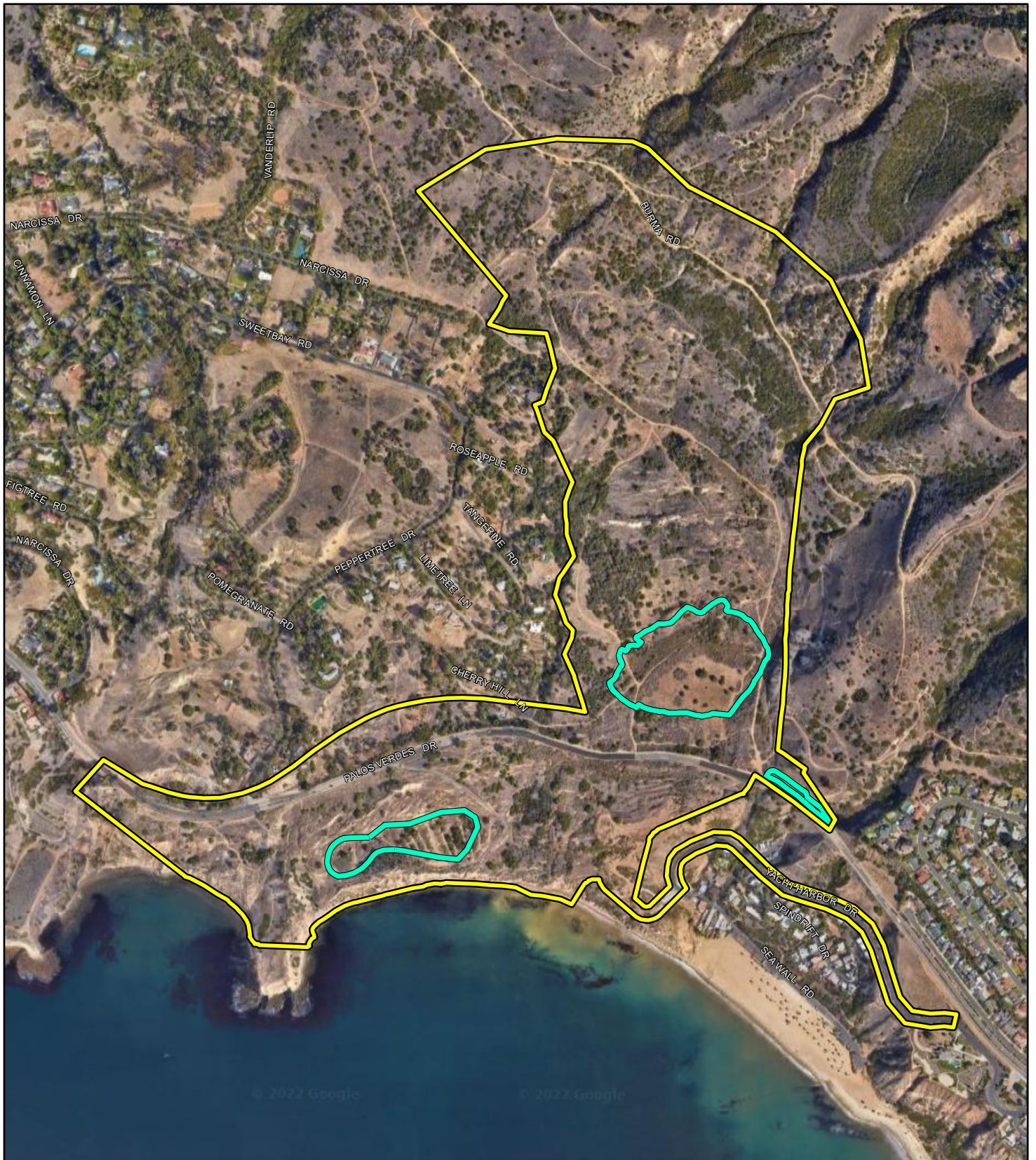


FIGURE 3-15

LSA

LEGEND

- Project Location
- Staging Area



SOURCE: Google Imagery (2022); Rancho Palos Verdes (2022)

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Portuguese Bend Landslide Remediation Project
Staging Areas

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Construction activities would be expected to include site preparation, fencing, clearing/grubbing, grading, trenching, drilling, and associated activities. Site preparation would involve access paths, working platforms, and other temporary site features as needed to perform the construction. These items would be established in the field during the construction mobilization or areas that do not affect habitat-sensitive vegetation. The estimated total grading for all components listed above is cut of 54,200 cubic yards, fill of 2,200 cubic yards, and protective cover soil of 44,800 cubic yards. There will be no export; excess soil will be used to create a berm for the low-flow reduction area. Site preparation and construction of the proposed project would be in accordance with all federal, State, and City zoning codes and requirements. Noise-generating construction activities would be limited to the construction hours noted above. All stationary equipment and machines with the potential to generate a significant increase in noise or vibration levels would be located away from noise receptors to the extent practicable. The contractor would conduct construction activities in such a manner that the maximum noise levels at the affected buildings would not exceed established noise levels. No lighting or nighttime work will occur.

3.4.4 Project Operation

After construction, the surface fracture infills, surface water improvements, and hydraugers described above would operate on site permanently. However, if artesian pressure is successfully relieved over time and groundwater levels are tested at acceptable levels, removal of the tanks may be possible. If so, any remaining groundwater would remain percolating from the underground hydraugers into the surface drainage system.

The hydrauger operations would use gravity flow for filling of the water tanks and any tank discharge. Each tank would include a gasoline-powered pump, which would be used in the event of an emergency. The gasoline would be supplied by tanks integrated within the water tank design. The gasoline tanks would be filled manually on an as-needed basis.

Inspection of each of the project components (after construction) would be conducted on a regular basis, and maintenance activities would be conducted on an as-needed basis.

3.5 REQUIRED PERMITS AND APPROVALS

The City is the Lead Agency and has principal authority and jurisdiction over all land use entitlements within incorporated Rancho Palos Verdes. Permits/approvals to allow site preparation and construction of the proposed project, such as grading and building permits, as has historically been the case for development in the PBL area, would be issued by the City. Improvements and off-site project infrastructure connections within rights-of-way will necessitate encroachment permits issued by the City, which maintains the right-of-way.

Pursuant to Section 15381 of the *State CEQA Guidelines*, “Responsible Agency” means a public agency that proposes to carry out or approve a project or a portion of a project for which the Lead Agency is preparing or has prepared an EIR. For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project, a portion of the project, or mitigation for the project. In addition to those discretionary actions described above, the proposed project would require a number of nondiscretionary permits/approvals from Responsible Agencies, as listed in Table 3-1.

Table 3-1: Anticipated Permits and Authorizations

Agency	Permit/Authorization
United States Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> ● Clean Water Act 404 Individual Permit
California Department of Fish and Wildlife (CDFW)	<ul style="list-style-type: none"> ● California Fish and Game Code Section 1602 Lake or Streambed Alteration Notification
Regional Water Quality Control Board (RWQCB)	<ul style="list-style-type: none"> ● Clean Water Act 401 Water Quality Certification ● Waste Discharge Requirements, if applicable
State Water Resources Control Board (SWRCB)	<ul style="list-style-type: none"> ● Construction General Permit
South Coast Air Quality Management District (SCAQMD)	<ul style="list-style-type: none"> ● Compliance with SCAQMD Rule 402 – Nuisance, Rule 403 – Fugitive Dust, and Rule 1113 – VOC Emissions
County of Los Angeles	<ul style="list-style-type: none"> ● Well/Borehole Permit for hydrauger installation ● Groundwater Permit
City of Rancho Palos Verdes	<ul style="list-style-type: none"> ● Landscaping, transportation permits, and approvals for driveways and routes, grading, hauling, and public utilities ● Grading Permit ● Site Plan Review ● Coastal Development Permit ● Landslide Moratorium Ordinance
California Coastal Commission	<ul style="list-style-type: none"> ● Appealable portion of the City’s coastal district

Source: Compiled by LSA (2022).

4.0 EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES

The following chapter contains 16 sections, each of which addresses one environmental topic outlined in Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines for Implementation of CEQA (State CEQA Guidelines)* (California Code of Regulations [CCR] Title 14, Chapter 3, Sections 15000–15397).

For each environmental impact issue analyzed, the Draft Environmental Impact Report (EIR) includes a detailed explanation of the existing conditions, thresholds of significance that will be applied to determine whether the proposed Portuguese Bend Landslide Remediation Project (proposed project) impacts are significant, analysis of the environmental impacts, and a determination of whether the proposed project would have a significant impact if implemented. A “significant impact” or “significant effect” means “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (14 CCR 15382). Each environmental topic section in Chapter 4.0 also includes a discussion of the cumulative effects of the project when considered in combination with other projects causing related impacts, as required by Section 15130 of the *State CEQA Guidelines*.

Each of the 16 sections is organized into subsections, as follows:

1. **Introduction** briefly describes the topics and issues covered in the section.
2. **Scoping Process** describes the comment letters received during the public review period of the Initial Study/Notice of Preparation (IS/NOP) that are related to the topic.
3. **Methodology** describes the approach and methods employed to complete the environmental analysis for the issue under investigation.
4. **Existing Environmental Setting** describes the physical conditions that existed at the time the NOP was prepared and distributed that may influence or affect the issue under investigation. This section focuses on physical site characteristics that are relevant to the environmental topic being analyzed.
5. **Regulatory Setting** lists and discusses the laws, ordinances, regulations, and policies that relate to the specific environmental topic and how they apply to the proposed project.
6. **Impact Significance Criteria** provides the thresholds that are the basis of the conclusions of significance, which are based on the criteria in Appendix G of the *State CEQA Guidelines*.
7. **Project Impacts** describes the potential environmental changes to the existing physical conditions that may occur if the proposed project is implemented. Evidence is presented to show the cause-and-effect relationship between the proposed project and potential changes in the environment. The exact magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether

impacts may be significant. In accordance with CEQA, potential project impacts, if any, are classified as follows for each of the environmental topics discussed in this Draft EIR.

- a. **Significant Adverse Impact.** Significant adverse impacts are those that cannot be fully mitigated or avoided. If the project is approved, decision makers are required to adopt a statement of overriding considerations pursuant to *State CEQA Guidelines* Section 15093 explaining why the project benefits outweigh the unavoidable adverse environmental effects caused by these significant adverse environmental impacts.
 - b. **Less than Significant Impact with Mitigation Incorporated.** This classification refers to significant environmental impacts that can be feasibly mitigated or avoided. If the project is approved, decision makers are required to make findings pursuant to *State CEQA Guidelines* Section 15091 that adverse significant impacts have been mitigated to the maximum extent feasible through the implementation of mitigation measures.
 - c. **Less than Significant Impact.** Less than significant impacts are environmental impacts that have been identified but are not significant. No mitigation is required for less than significant impacts.
 - d. **No Impact.** A “no impact” determination is made when the proposed project is found to have no environmental impact.
8. **Level of Significance Prior to Mitigation** describes the significance of potential impacts prior to the implementation of mitigation measures.
 9. **Regulatory Compliance Measures (RCMs)** are specific standards imposed by the approving agency and are required of the proposed project to reduce its potential environmental effects. Because these features are regulatory, and therefore required, they do not constitute mitigation measures.
 10. **Mitigation Measures** are project-specific measures that would be required for the project to avoid, minimize, rectify, reduce, eliminate, or compensate for a potentially significant adverse impact.
 11. **Level of Significance after Mitigation** describes the significance of potential impacts after implementation of mitigation measures. Potential significant unavoidable impacts are clearly stated in this section.
 12. **Cumulative Impacts** refers to potential environmental changes to the existing physical conditions that may occur as a result of project implementation together with all other reasonably foreseeable, planned, and approved future projects producing related impacts. Section 15355 of the *State CEQA Guidelines* defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time. For each of the environmental topics considered in this Draft EIR, the geographic scope of the cumulative

analysis is defined. For example, the geographic scope of the cumulative analysis for potential cumulative hydrology and water quality impacts includes all areas within the defined watershed.

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4.1 AESTHETICS

This section provides a discussion of the existing visual and aesthetic resources on the project site and in the surrounding area and evaluates the potential for changes in visual character that could result from implementation of the Portuguese Bend Landslide Remediation Project (proposed project). This section also evaluates the potential loss of existing visual resources, effects on public views and compatibility with existing uses.

Information presented in this section is based on the City of Rancho Palos Verdes (City) General Plan; Local Coastal Specific Plan (2015); Visual Resources Element (2018); Conservation and Open Space Element (2018); Land Use Element (2018); and Municipal Code.

4.1.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Six of the comment letters included comments related to aesthetics.

These comment letters from the United States Fish and Wildlife Service/California Department of Fish and Game (USFWS/CDFW), California Native Plant Society, Palos Verdes Peninsula Land Conservancy, and members of the general public bring up concerns regarding the impacts that the implementation of the proposed project would have on the aesthetic value of the Portuguese Bend Preserve (Preserve) area. Further, these letters also call for minimizing any potential visual impacts to the Preserve area to the lowest extent possible to maintain the visual character of the surrounding natural community.

4.1.2 Methodology

The assessment of aesthetic impacts is subjective by nature. This analysis attempts to identify and objectively examine factors that contribute to the perception of aesthetic impacts that would be caused by implementation of the proposed project. The potential aesthetic impacts of the proposed project have been assessed based on consideration of several factors, including scale, mass, proportion, and the concepts described below.

- **Scenic Vista:** A scenic vista is a generally public viewpoint that provides expansive views of a highly valued landscape for the public's benefit. It is usually viewed from some distance away. Aesthetic components of a scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. A scenic vista can be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by altering the view corridors or "vista" of the scenic resource. Key factors in determining whether a proposed project would alter scenic vistas include the project's proposed height, mass, and location relative to surrounding land uses and travel corridors.
- **Sensitive Views:** Sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any

valued public vantage point. Sensitivity level has to do with the (1) intensity of use of a visual resource; (2) visibility of a visual resource; and (3) importance of the visual resource to users.

- **Scenic Corridors:** Scenic corridors are channels that facilitate movement (primarily by automobile, transit, bicycle, or foot) from one location to another with expansive views of natural landscapes and/or visually attractive fabricated development. Scenic corridors analyzed under the California Environmental Quality Act (CEQA) typically include State-designated scenic highways and locally designated scenic routes.
- **Scenic Quality:** The scenic quality of a streetscape, building, group of buildings, or other fabricated or natural features that creates an overall impression of an area within an urban context. For example, a scenic vista along the boundary of a community, a pleasing streetscape with trees, and well-kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of scenic quality can be organized around four basic elements: (1) site utilization, (2) buildings and structures, (3) landscaping, and (4) signage. Adverse scenic quality effects can include the loss of aesthetic features or the introduction of contrasting features that could contribute to a decline in overall scenic quality.
- **Glare:** A continuous or periodic intense light that may cause eye discomfort or be temporarily blinding to humans.
- **Light Sources:** A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture. Any translucent enclosure of a light source is considered to be part of the light source.
- **Regulations Governing Scenic Quality:** Visual impacts have been evaluated based on the project's consistency with goals and policies established in the Land Use and Visual Resources Elements of the City's General Plan, the Corridors Element of the City's Local Coastal Specific Plan, and development standards related to aesthetics in the City's Municipal Code.

The impact analysis focuses on aesthetic-related changes to the project site and surrounding area that may result from the approval of the proposed project.

4.1.2.2 Approach

As stated above, the assessment of aesthetic impacts is subjective by nature. The analysis identifies and objectively examines factors that contribute to the perception of aesthetic impacts due to project implementation. The project's potential aesthetic impacts have been assessed based on consideration of several factors, including the concepts described above. Key views from public vantage points are used in the analysis to demonstrate pre- and post-project visual conditions at the project site and in the surrounding area. Key views were taken from public right-of-way and not from private property. Overall, the analysis in this section evaluates aesthetic changes that would occur because of project implementation.

Figure 4.1-1, Key View Locations, illustrates the nine vantage points from which key view photographs were taken and illustrates the representative views from those locations. Each key view listed below illustrates each respective vantage point as seen under existing conditions and with project renderings/simulations.

- Figure 4.1-2(a): Key View 1
- Figure 4.1-2(b): Key View 2
- Figure 4.1-2(c): Key View 3
- Figure 4.1-2(d): Key View 4
- Figure 4.1-2(e): Key View 5
- Figure 4.1-2(f): Key View 6
- Figure 4.1-2(g): Key View 7
- Figure 4.1-2(h): Key View 8
- Figure 4.1-2(i): Key View 9

The project renderings/simulations are conceptual representations of the scale, mass, and proportion of future development allowable under the proposed project.

4.1.3 Existing Environmental Setting

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the Portuguese Bend Landslide (PBL), is the Pacific Ocean. The proposed project site consists of approximately 206 acres. The project site includes approximately 104 acres of land located within the City-owned Preserve, specifically within the Portuguese Bend Reserve, Abalone Cove Reserve, and the City's open space and beach area east of Abalone Cove Reserve. The Preserve is managed by the City pursuant to the City Council-adopted Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP).

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon, and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community and the Portuguese Bend Beach Club.

Public trails within the Abalone Cove Reserve are located on the eastern side of the project site, seaward of Palos Verdes Drive South. Public trails within the Portuguese Bend Reserve are located on the northern side of the project site. Additional trails within the City's open space area near the archery range also fall within the project site on the seaward side of Palos Verdes Drive South.

Vegetation consists of 13.58 acres of Saltbrush Scrub, 114.07 acres of Undifferentiated Coastal Sage Scrub, 5.37 acres of *Rhus*-Dominated Coastal Sage Scrub, 32.93 acres of Exotic Woodland, 11.40 acres of disturbed vegetation, 26.90 acres of development (buildings, ornamental landscaping, roadways, and hiking trails), and 2.22 acres of Rocky Shore. Due to the land movement, surface fractures exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South. The proposed project is consistent with the existing General Plan land use and zoning designations.

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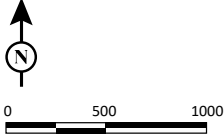


LSA

LEGEND

 Key View Photo Location and Direction

FIGURE 4.1-1



SOURCE: Google Earth, 2022

Portuguese Bend Landslide Remediation Project
Key View Locations

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4.1.4 Regulatory Setting

4.1.4.1 Federal Regulations

No federal policies or regulations pertaining to aesthetics are applicable to the proposed project.

4.1.4.2 State Regulations

Caltrans Scenic Highway Program. The California Department of Transportation (Caltrans) Scenic Highway Program protects the natural scenic beauty of the State's highways and corridors through its designated scenic highways throughout the State. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. Other considerations given to a scenic highway designation include how much of the natural landscape a traveler may see and the extent to which visual intrusions degrade the scenic corridor.

As described in Section 4.1, Aesthetics, of the IS/NOP (Appendix A of this EIR), no officially designated scenic highways are located in the immediate vicinity of the project site.

4.1.4.3 Regional Regulations

No regional policies or regulations pertaining to aesthetics are applicable to the proposed project.

4.1.4.4 Local Regulations

City of Rancho Palos Verdes Visual Resources Element. The City Council adopted the most recent Visual Resources Element of the General Plan in September 2018. The City established the goals and policies within the Visual Resources Element to ensure the continued preservation, restoration, and enhancement of significant visual resources within the city. The Portuguese Bend area is recognized as its visual resource area within this element.

City of Rancho Palos Verdes Conservation and Open Space Element. The City Council adopted the most recent Conservation and Open Space Element of the General Plan in September 2018. The project site is primarily zoned as Open Space - Hazard (OH), with a portion zoned as Residential Single Family - lot less than 20,000 square feet (RS-2) to the southeast (City of Rancho Palos Verdes 2018c). Portions of the project site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast.

City of Rancho Palos Verdes Municipal Code. As mentioned previously, a portion of the project area is located within the City's Urban Design Overlay Control District (OC-3). As a result, Section 17.40.060, Urban Appearance Overlay Control District (OC-3) and Regulations, would apply, as this ordinance was established to preserve, protect, and maintain significant views and vistas from major public view corridors and public lands and waters within Rancho Palos Verdes that characterize the city's appearance as defined in the visual aspects portion of the General Plan and the Corridors Element of the Coastal Specific Plan. The City's Visual Resources Element also recognizes the Portuguese Bend area as its own visual resource area, meaning the regulations outlined in Section 17.40.060 of the City's Municipal Code would be adhered to for the proposed project.

City of Rancho Palos Verdes Local Coastal Specific Plan. The City Council adopted the Local Coastal Specific Plan in December 1978 and conducted an update in 2015. The Local Coastal Specific Plan was established to set up goals and policies to manage natural resources along the City's 7.5-mile coastline area and maintain its value as a locally defined public resource. Further, the Local Coastal Specific Plan was developed to represent the City's Local Land Use Plan component of the Local Coastal Program, as mandated by the 1976 Coastal Act. Located within the Coastal Specific Plan is the Corridors Element, which defines the different types of visual and access corridors within the Coastal Zone. In particular, Palos Verdes Drive South is regarded as a main access corridor for the PBL area, which is regarded as a visual corridor within the project site. One policy outlined in the Local Coastal Specific Plan is applicable to the proposed project, as listed below:

- Require development proposal within areas which might impact corridors to analyze the site conditions in order to mitigate impacts and obtain feasible implementation of all corridor guidelines (C-16 – Policy 1)

4.1.5 Thresholds of Significance

The thresholds for recreation impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to recreation if it would:

Threshold 4.1.1: Have a substantial adverse effect on a scenic vista.

Threshold 4.1.2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Threshold 4.1.3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Threshold 4.1.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The IS, provided in Appendix A, substantiates that there would be no impacts associated with Threshold 4.1.2 because the project site does not contain any scenic trees, rock outcroppings, historic buildings, or other known scenic resources. Further, the nearest State designated scenic highway is more than 13 miles northeast of the project site. In addition, the IS substantiates those impacts associated with Thresholds 4.1.3 and 4.1.4 would be less than significant. The project is largely undeveloped within an urbanized area, and construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area.

Additionally, the proposed project would result in less than significant impacts related to light and glare because construction of the proposed project would be required to adhere to Rancho Palos

Verdes Municipal Code §17.56.020, which allows construction from 7:00 a.m. to 6:00 p.m., Monday through Friday, and from 9:00 a.m. to 5:00 p.m. on Saturdays. Therefore, lighting would not be required during construction. Construction of the proposed project would require construction equipment, which may result in temporary glare impacts. However, these glare impacts would be temporary and would cease upon completion of the project. Operation of the proposed project would not construct any structures or buildings that would result in permanent increases to lighting or glare. Impacts would be less than significant, and no further discussion is required. These thresholds will not be addressed in the following analysis.

4.1.6 Project Impacts

Threshold 4.1.1: Have a substantial adverse effect on a scenic vista.

General Plan. According to the General Plan Land Use Element (2018), the project site is primarily zoned as Open Space - Hazard (OH), with a portion zoned as Residential Single Family - lot less than 20,000 square feet (RS-2) to the southeast (City of Rancho Palos Verdes 2018c). Portions of the project site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast. The implementation of the proposed project would not alter any of these existing land uses and would remain consistent with these designations, and no General Plan Amendment would be required for the proposed project.

The City's General Plan includes goals and policies related to urban design. As shown in Table 4.1.A, below, the project would be consistent with applicable General Plan goals and policies related to aesthetics and scenic quality.

As shown in Table 4.1.A, the project would be consistent with the General Plan goals and policies related to aesthetics and scenic quality.

Summary. The proposed project would not degrade the character or quality of the project site, nor would it contribute to an overall degradation of the visual character or quality of the surrounding area. Construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area. Further, the proposed landslide remediation is consistent with all applicable General Plan goals and policies governing aesthetics and scenic quality. The proposed project would also be consistent with all applicable zoning regulations governing aesthetics and scenic quality on the property. Therefore, the proposed project would not substantially degrade the visual character of the project site or conflict with applicable zoning and other regulations governing scenic quality, and no mitigation would be required.

Table 4.1.A: General Plan Consistency Analysis

Goals and Policies	Proposed Project Consistency
Visual Resources Element	
<p>Visual Resources Goal 1: Preserve views and vistas for the public benefit and, where appropriate, the City should strive to enhance and restore these resources and the visual character of the City, and provide and maintain access for the benefit and enjoyment of the public.</p>	<p>Consistent. The proposed project improvements would implement geotechnical engineering elements such as infilling surface fractures to reduce the infiltration of surface water into the ground; constructing surface swales and flow reduction areas to collect, slow, and divert surface water to the ocean; and installing a subsurface water extraction system (underground hydraugers with associated aboveground tanks and pumping equipment) by means of directional drilling to alleviate artesian pressure and also lower water levels within the landslide mass. These engineering elements would include a color scheme that closely matches the natural environment in order to be consistent with the natural views of the Preserve. Overall, these elements are being implemented to provide long-term improvements for the visual character of the Preserve area in order to maintain access for the benefit and enjoyment of the public. Therefore, the proposed project would be consistent with Visual Resources Goal 1.</p>
<p>Visual Resources Policy 2.3: Preserve and enhance existing positive visual elements and restore those that have been lost.</p>	<p>Consistent. The purpose of the proposed project is to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering elements described in the consistency analysis above. In doing so, implementation of the proposed project will be actively working to preserve the positive visual elements of the Preserve area to minimize further landslide movement that could degrade Preserve views. The project will blend any physical features with the surrounding environment through the use of paint color that is visually compatible with the Preserve. Surface swales and flow reduction areas would also include native vegetation, to the extent feasible, in order to blend in with the current natural environment. Therefore, the proposed project would be consistent with Policy 2.3 in the Visual Resources Element.</p>
<p>Visual Resources Policy 2.6: Develop and maintain, in conjunction with the appropriate agencies, public access to paths and trails for the enjoyment of views.</p>	<p>Consistent. Although implementation of the elements associated with the proposed project would require the closure of certain paths and trails within the Preserve area, these closures would be temporary and limited to the construction period. Moreover, if any Preserve trails were to become damaged or require maintenance resulting from the project, the City would coordinate with the City’s Preserve Habitat Manager and the Land Conservancy to repair trails in accordance with the NCCP/HCP and Public Use Master Plan. This analysis is further discussed in Section 4.12, Recreation, of this EIR. The maintenance of these trails and paths is a high priority to the City in order to provide continued public access for the enjoyment of Preserve views. Therefore, the proposed project would be consistent with Policy 2.6 of the Visual Resources Element.</p>
<p>Visual Resources Policy 2.7: For developments that are proposed within areas that impact the visual character of a corridor, require developers to incorporate treatments into their projects that enhance a corridor’s imagery.</p>	<p>Consistent. As mentioned previously, the proposed project improvements would implement geotechnical engineering elements in the Preserve area that would include a color scheme that closely matches the natural environment in order to be consistent with the natural views of the Preserve. Although these tank structures would be new to the site, the visual character of the PBL area will not be highly impacted as these tanks will be installed in locations chosen to be out of public view as much as possible. The proposed simulation view of these tanks in different parts of the project area are also shown on Figures 4.1-2(a) through (i) which further showcases the minimal change to the overall visual character of the Preserve area. Therefore, the proposed project would be consistent with Policy 2.7 of the Visual Resources Element.</p>

Table 4.1.A: General Plan Consistency Analysis

Goals and Policies	Proposed Project Consistency
<p>Visual Resources Policy 2.10: Require residents and developers to mitigate light pollution associated with developments.</p>	<p>Consistent. As mentioned previously, the proposed project would result in less than significant impacts related to light and glare because construction of the proposed project would be required to adhere to Rancho Palos Verdes Municipal Code §17.56.020, which allows construction from 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 pm. on Saturdays. Therefore, lighting would not be required during construction. The operation of the proposed project also would not contribute to any additional light pollution in the surrounding Preserve area. Therefore, the proposed project would be consistent with Policy 2.10 of the Visual Resources Element.</p>
Conservation & Open Space Element	
<p>Conservation & Open Space Goal 1: Conserve, protect, and enhance the City’s natural resources, beauty; and open space for the benefit and enjoyments of its residents and the residents of the entire region. Future development shall recognize the sensitivity of the natural environmental and be accomplished in such a manner as to maximize the protection of it.</p>	<p>Consistent. The proposed project improvements would implement geotechnical engineering elements such as infilling surface fractures to reduce the infiltration of surface water into the ground; constructing surface swales and flow reduction areas to collect, slow, and divert surface water to the ocean; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower water levels within the landslide mass. These engineering elements would include a color scheme that closely matches the natural environment in order to be consistent with the natural views of the Preserve. Further, the project will blend any physical features with the surrounding environment through the use of compatible paint color. Surface swales and flow reduction areas would also include native vegetation, to the extent feasible, in order to blend in with the current natural environment. Overall, these elements are being implemented to conserve, protect, and enhance the PBL area for the enjoyment of residents of the entire region. Therefore, the proposed project would be consistent with Conservation & Open Space Goal 1.</p>
Land Use Element	
<p>Land Use Goal 9: Control the alteration of natural terrain.</p>	<p>Consistent. The proposed project improvements would implement geotechnical engineering elements to conserve, protect, and enhance the PBL area in order to control and minimize the alteration of natural terrain in the Preserve area. However, it should be noted that in order to implement the proposed project elements, grading would be required in order to install project features, which would alter the existing terrain at the project site. This grading would be limited as much as possible and overall done in order to ultimately conserve and enhance the PBL area as mentioned above. Therefore, the proposed project would be consistent with Land Use Goal 9.</p>
<p>Land Use Goal 10: Preserve the rural and open character of the City through zoning, cooperation with other jurisdictions, and acquisition of open space land.</p>	<p>Consistent. The engineering elements associated with the proposed project would be implemented to match the visual character of the Preserve area as closely as possible to preserve the open character of the PBL area. Further, the proposed project is consistent with existing land uses and therefore would not require any rezoning, cooperation with other jurisdictions, or acquisition of open space land in order to implement the proposed project. Therefore, the proposed project would be consistent with Land Use Goal 10.</p>

Table 4.1.A: General Plan Consistency Analysis

Goals and Policies	Proposed Project Consistency
Local Coastal Specific Plan—Corridors Element	
<p>Policy 1: Require development proposal within areas which might impact corridors to analyze the site conditions in order to mitigate impacts and obtain feasible implementation of all corridor guidelines</p>	<p>Consistent. The proposed project improvements would implement geotechnical engineering elements to conserve, protect, and enhance the PBL area in order to control and minimize the alteration of natural terrain in the Preserve area. These engineering elements would include a color scheme that closely matches the natural environment in order to be consistent with the natural views of the Preserve as a visual corridor within Rancho Palos Verdes. Further, the project will blend any physical features with the surrounding environment through the use of visually compatible paint color. Surface swales and flow reduction areas would also include natural rock and native vegetation, to the extent feasible, in order to blend in with the current natural environment. Overall, these elements are being implemented to conserve, protect, and enhance the PBL area and would not significantly obstruct views of the coastline along the Palos Verdes Drive South visual corridor. Therefore, the proposed project would be consistent with Corridors Element Policy 1.</p>

Sources: Rancho Palos Verdes Local Coastal Specific Plan (2015); General Plan Visual Resources Element (2018); Conservation and Open Space Element (2018); and Land Use Element (2018).

NCCP/HCP = Natural Communities Conservation Plan/Habitat Conservation Plan

PBL = Portuguese Bend Landslide

Preserve = Palos Verdes Nature Preserve

Visual Simulations Analysis. Figures 4.1-2(a) through 4.1-2(i) (Key Views 1 through 9, respectively) illustrate each of the nine key public views selected for this analysis. In order to assist with visualizing the implementation of the proposed project’s engineering elements, visual simulations of nine different viewpoints located throughout the PBL area were prepared. In order to determine impacts related to aesthetics, the existing conditions views are compared to the visual simulation of the proposed project components. These nine key views are described in more detail below in Table 4.1.B: Key View Descriptions.

Table 4.1.B: Key View Descriptions

Key View No.	Description
Key View 1 – Figure 4.1-2(a)	Key View 1 depicts the view of the Portuguese Bend Beach Club looking northwesterly from Palos Verdes Drive South toward Hydraulers A1 and A6. In its existing condition, there are unobstructed views of the Beach Club. However, even with implementation of the aboveground water storage tanks associated with the underground Hydraulers A1 and A6 in the proposed views, these views remain relatively unobstructed due to how the design of the tanks and pumping equipment blends in with the surrounding environment.
Key View 2 – Figure 4.1-2(b)	Key View 2 depicts the view of the Seaview residential neighborhood looking northwesterly from Palos Verdes Drive South toward Hydraulers A1 and A6 in horizontal and vertical configurations. In its existing condition, there are unobstructed views of the Seaview neighborhood. However, even with implementation of the aboveground water storage tanks associated with the underground Hydraulers A1 and A6, these views remain relatively unobstructed due to how the design of the tanks and pumping equipment blends in with the surrounding environment.
Key View 3 – Figure 4.1-2(c)	Key View 3 depicts an aerial view northwesterly toward the overall project location, with views of traffic along Palos Verdes Drive South along the left side of the existing and proposed views. This key view represents the proposed infilling of surface fractures to reduce the infiltration of surface water into the ground, flow reduction area, engineered swales and primary staging area. Although the proposed view would visually alter a portion of the existing project site as depicted in the view, the implementation of this project feature would be done in a way where infilling would closely match the surrounding environment to preserve the natural aesthetic of the area.
Key View 4 – Figure 4.1-2(d)	Key View 4 depicts a view of Cherry Hill Lane looking southerly toward the Palos Verdes Drive South culvert/underground pipe. The proposed view for this area depicts a change within the existing natural vegetation of this area by implementing a proposed culvert that will collect, slow, and divert surface water to the ocean. However, this culvert has been designed in a way that reflects the surrounding environment and offers an overall minimal change to the visual character of this scenery.
Key View 5 – Figure 4.1-2(e)	Key View 5 depicts a view from Smugglers Trail looking southeasterly toward Hydrauler A5. In its existing condition, there are unobstructed views of the nearby scenery from Smugglers Trail. However, even with implementation of the aboveground water storage tank associated with the underground Hydrauler A5 in the proposed views, these views remain relatively unobstructed due to how the design of the tank and pumping equipment blends in with the surrounding environment.
Key View 6 – Figure 4.1-2(f)	Key View 6 depicts a view from Burma Road looking southwestward toward Hydrauler A1 in both horizontal and vertical configurations. In its existing condition, there are unobstructed views of the nearby scenery from Burma Road. However, even with implementation of the aboveground water storage tank associated with the underground Hydrauler A1 in the proposed views, these views remain relatively unobstructed due to how the design of the tank and pumping equipment blends in with the surrounding environment. The key view also provides an overall view of the flow reduction component,

Table 4.1.B: Key View Descriptions

Key View No.	Description
	engineered swales leading to the flow reduction component, and primary staging area.
Key View 7 – Figure 4.1-2(g)	Key View 7 depicts a view from Peppertree Trail looking northwesterly toward Hydrauger A2. In its existing condition, there are unobstructed views of the nearby scenery from Peppertree Tail. With the proposed aboveground (vertical) tank configuration associated with the underground Hydrauger A2, the tank can be seen slightly more as opposed to an aboveground (horizontal) configuration. However, even with the implementation of Hydrauger A2 with its aboveground tank as either a horizontal or vertical configuration in the proposed views, these views remain relatively unobstructed due to how the tank and pumping equipment blends in with the surrounding environment.
Key View 8 – Figure 4.1-2(h)	Key View 8 depicts a view from Peppertree Trail looking southerly toward Hydrauger A3 in both horizontal and vertical configurations. Users of Peppertree Trail will be able to notice a visual change to views from this point as opposed to the unobstructed existing condition. However, even with implementation of the underground Hydrauger A3 with either a horizontal or vertical aboveground tank in the proposed views, these views remain relatively unobstructed due to how the design of the tank blends in with the surrounding environment. Further, the aboveground tank and pumping equipment associated with Hydrauger A3 from this view will be implemented in a location that does not impede the overall use of this segment of Peppertree Trail.
Key View 9 – Figure 4.1-2(i)	Key View 9 depicts an aerial view above Toyon Trail northeasterly toward the Burma Road culvert/underground pipe. The proposed view for this area depicts a change within the existing natural view of this area associated with the proposed culvert, which will collect, slow, and divert surface water to the ocean. The design of the culvert includes incorporation of native vegetation and rock stabilization that blends with the existing vegetation adjacent to the proposed project. However, the design of this culvert has been chosen in a way that reflects the surrounding environment and offers an overall minimal change to the visual character of this scenery.

4.1.7 Level of Significance Prior to Mitigation

There would be no potentially significant impacts related to aesthetics for the proposed project.

4.1.8 Regulatory Compliance Measures and Mitigation Measures

4.1.8.1 Regulatory Compliance Measures

No regulatory compliance measures related to aesthetics are required for the proposed project.

4.1.8.2 Mitigation Measures

No mitigation measures related to aesthetics are required for the proposed project.

4.1.9 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to aesthetics. No mitigation would be required.

4.1.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for aesthetics. The cumulative impact area for recreation related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing aesthetics and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.1.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to aesthetics. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to aesthetics. Additionally, construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area. The cumulative impact area for aesthetic resources related to the proposed project is the city of Rancho Palos Verdes. Several residential and a few commercial development projects (remodels) are approved and/or pending within the city. The residential projects include 36 new single-family residential units in various stages of construction (Trump National Golf Club [Tract No. 50667]), 23 new single-family residential lots (no projects in review) associated with Trump National Golf Club (Tract No. 50666), 16 new single-family residential units on vacant lots in various stages of construction (Monks plaintiffs lots) and 31 new single-family residential units on vacant lots in various stages of the development review process (non-Monks plaintiffs lots), for a total of 106 total single-family units. Given the minimal number of cumulative projects with units dispersed at various locations in the city, cumulative impacts would be negligible. Furthermore, each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing aesthetics. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to aesthetics.

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4.2 AIR QUALITY

This section discusses existing air quality, summarizes existing air quality regulations, and evaluates potential air quality impacts associated with the proposed Portuguese Bend Landslide Remediation Project (proposed project). This section summarizes the pertinent information and findings provided in the *Air Quality, Energy, and Greenhouse Gas Emissions Analysis Portuguese Bend Landslide Remediation Project* (Vista 2023) that was prepared for the project. This report is provided in Appendix B of this Draft Environmental Impact Report (EIR).

4.2.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period for the Initial Study/Notice of Preparation (IS/NOP). In addition, there are public comments received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Two comment letters included comments related to air quality.

- The letter by Ken Dyda received on January 3, 2021, asks how the air quality impacts from the proposed project would compare to current conditions.
- The letter by the South Coast Air Quality Management District (SCAQMD) received on January 7, 2021, requested that the air quality and greenhouse gas (GHG) analyses utilize the *California Environmental Quality Act (CEQA) Air Quality Handbook* (SCAQMD 1993) and website as well as the California Emissions Estimator Model (CalEEMod) software as guidance. SCAQMD also requested that the analysis use criteria pollutant emissions to compare to SCAQMD's CEQA regional pollutant emissions significance thresholds. If the proposed project would generate diesel emissions, it is recommended that a mobile-source health risk assessment be performed.

4.2.2 Methodology

An *Air Quality, Energy, and Greenhouse Gas Emissions Analysis Portuguese Bend Landslide Remediation Project* (Vista 2023) was prepared for the proposed project. Air emissions from construction and operation of the proposed project were evaluated in accordance with methodologies recommended by the California Air Resources Board (CARB) and the SCAQMD. The latest version of CalEEMod (v2020.4.0), which was released by the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air quality districts, was used to determine construction and operational air quality emissions of the proposed project. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were primarily calculated using CalEEMod model defaults for Los Angeles County. However, the length of construction is based on estimates provided by the City and project engineers, and the maximum daily trip parameters are based on estimates provided by the *Transportation Assessment Portuguese Bend Landslide Project* (Transportation Assessment) (Appendix H) prepared by Linscott, Law & Greenspan on January 19, 2023; construction of the proposed project is anticipated to start in July 2023 and is estimated to last until December 2025. Project-related emissions were modeled under the assumption that construction of the proposed project would occur as four components. The construction off-road equipment list (shown in Table G of Appendix B, *Air Quality, Energy, and Greenhouse Gas Emissions*

Analysis Portuguese Bend Landslide Remediation Project) is used in the CalEEMod model to calculate on-site emissions for each construction component.

4.2.3 Existing Environmental Setting

Rancho Palos Verdes, which includes the project site, is within the 6,745-square-mile South Coast Air Basin (Basin), which is under SCAQMD jurisdiction. The Basin includes the nondesert portions of Los Angeles and San Bernardino Counties, the majority of Riverside County, and all of Orange County. The air quality in the region is influenced by many factors, including topography, meteorology, and existing air pollutant sources. Ambient air quality is typically characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The Basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following discussion describes the characteristics of the Basin and local air quality conditions in the vicinity of the project site.

4.2.3.1 Regional Climate

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin, which lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a climate that is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperatures range from the low 60s to the high 80s, measured in degrees Fahrenheit (°F). Coastal areas have less variability in annual minimum and maximum temperatures compared to inland areas. January is typically the coldest month, and September is typically the warmest month in this area of the Basin.

Rainfall in the Basin varies by season and year. Almost all the annual rainfall comes from the fringes of mid-latitude storms between late November and early April, with summers being almost completely dry.

Although the climate of the Basin can be characterized as semi-arid, the air near the land surface is typically moist due to the presence of a marine layer, or a shallow layer of sea air. With very light daytime winds in south coastal Los Angeles County, air tends to move regionally onshore from the Pacific Ocean to the Mojave Desert. These winds allow for local mixing, but the coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the Basin into the interior valleys.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime, when the ground is cooler, than during daylight hours, when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens to allow the surface air layers to mix upward. This can be seen in the mid-to late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive smog buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversions or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NO_x) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

4.2.3.2 Criteria Air Pollutants

Certain air pollutants have been recognized as causing notable health problems and consequential damage to the environment either directly or in reaction with other pollutants due to their presence in elevated concentrations in the atmosphere. Criteria pollutants are regulated through the development of human health-based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and their health effects are discussed below.

- **Carbon Monoxide (CO):** CO is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels (e.g., gasoline or wood). CO concentrations tend to be the highest on winter mornings, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Health effects of CO exposure include chest pain with exercise and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but it exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.
- **Sulfur Oxides (SO_x):** SO_x gases are formed when fuel containing sulfur, such as coal and oil, is burned, as well as from the refining of gasoline. SO_x dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.
- **NO_x:** NO_x is the generic term for a group of highly reactive gases that contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of nitrogen dioxide (NO₂)

can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary man-made sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO_x reacts with other pollutants to form ground-level ozone (O_3), nitrate particles, acid aerosols, and NO_2 , which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_x is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

- **O_3 :** O_3 is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and NO_x , both of which are byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O_3 concentrations are generally highest during the summer months, when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Individuals exercising outdoors, children, and people with preexisting lung disease (e.g., asthma and chronic pulmonary lung disease) are the most susceptible to O_3 effects.
- **Particulate Matter Less Than 10 Microns in Size (PM_{10}):** PM_{10} consists of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller [about 0.0004 inch or less]) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction. A consistent correlation between elevated ambient coarse particulate matter levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and number of hospital admissions has been observed in different parts of the United States and various areas around the world. The elderly, people with pre-existing respiratory or cardiovascular disease, and children are more susceptible than adults to the effects of high levels of PM_{10} .
- **Particulate Matter Less Than 2.5 Microns in Size ($\text{PM}_{2.5}$):** $\text{PM}_{2.5}$ consists of tiny solid or liquid particles that are 2.5 microns or smaller (often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 released from power plants and industrial facilities and nitrates formed from NO_x released from power plants, automobiles, and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. In addition to the health effects of PM_{10} , discussed above, daily fluctuations in $\text{PM}_{2.5}$ concentration levels have been related to hospital admissions for acute respiratory conditions in children, school and kindergarten absences, decreased lung growth and respiratory volumes in children, and increased medication use in children and adults with asthma. The elderly, people with pre-existing respiratory or cardiovascular disease, and children are more susceptible to the effects of high levels of $\text{PM}_{2.5}$.
- **Lead:** Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the

removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence. Lead can be stored in the bone from early-age environmental exposure, and elevated lead levels in blood can occur due to a breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of their mothers being previously exposed to lead. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death; however, it appears that lead has no direct effect on the respiratory system.

- **VOCs and Reactive Organic Gases (ROG):** VOCs are hydrocarbon compounds (i.e., any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity (i.e., they do not react at the same speed or do not form O₃ to the same extent when exposed to photochemical processes). VOCs often have an odor (e.g., gasoline, alcohol, and the solvents used in paints). Exceptions to the VOC designation include: CO, carbon dioxide (CO₂), carbonic acid, metallic carbides or carbonates, and ammonium carbonate. Similar to VOCs, ROGs are also precursors in forming O₃ and consist of compounds containing methane, ethane, propane, butane, and longer-chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROGs and NO_x react in the presence of sunlight. The SCAQMD uses the terms VOC and ROG interchangeably. VOCs and ROGs are considered criteria pollutants since they are a precursor to O₃, which is a criteria pollutant. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs and ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health (for instance, by compromising the immune system). Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

4.2.3.3 Regional Air Quality

CARB coordinates and oversees both State and federal air pollution control programs in the State. CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the United States Environmental Protection Agency (USEPA) and local air quality districts. CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by CARB and the USEPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent 3 calendar years compared with the ambient air quality standards (AAQS). As discussed in further detail in Section 4.2.4, Regulatory Setting, the federal government and the State of California have both established health-based AAQS for the criteria air pollutants. Areas that meet the AAQS are

classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

Attainment areas may be:

- Attainment/unclassified (“unclassifiable” in some lists), which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;
- Attainment/maintenance (national ambient air quality standards [NAAQS] only), which violated an NAAQS currently in use (was nonattainment) in or after 1990 but now attains the standard and is officially re-designated as attainment by the USEPA with a maintenance State Implementation Plan (SIP); or
- Attainment (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Additional restrictions are imposed on nonattainment areas as required by the USEPA. The air quality data collected from monitoring stations are also used to monitor progress in attaining air quality standards. Table 4.2.A lists the attainment status for the criteria pollutants in the Basin.

4.2.3.4 Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Basin. Estimates of the existing emissions in the Basin provided in the 2012 Air Quality Management Plan (AQMP) indicate that collectively, mobile sources account for 59 percent of the VOC emissions, 88 percent of the NO_x emissions, and 40 percent of directly emitted PM_{2.5}, with another 10 percent of PM_{2.5} coming from road dust. The 2016 AQMP found that since 2012 AQMP projections were made, stationary-source VOC emissions have decreased by approximately 12 percent, but mobile-source VOC emissions have increased by 5 percent. The percentage of NO_x emissions remain unchanged between the 2012 and 2016 projections.

The SCAQMD has divided the Basin into 38 air monitoring areas, with a designated ambient air monitoring station representative of each area. The project site is located in Air Monitoring Area 3, which covers southwest coastal Los Angeles County. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in order of proximity to the project site, have been used: South Long Beach Monitoring Station (South Long Beach Station) and Long Beach-Signal Hill Monitoring Station (Signal Hill Station).

The South Long Beach Station is approximately 7 miles east of the project site, at 1305 East Pacific Coast Highway, Long Beach, and the Signal Hill Station is approximately 11 miles east of the project site, at 1710 East 20th Street, Signal Hill. The monitoring data is presented in Table 4.2.A and shows the most recent 3 years of monitoring data from CARB. PM₁₀ and PM_{2.5} were measured at the South Long Beach Station, and O₃ and NO₂ were measured at the Signal Hill Station.

Table 4.2.A: Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year		
	2019	2020	2021
Ozone¹:			
Maximum 1-Hour Concentration (ppm)	ND	0.105	0.086
Days > CAAQS (0.09 ppm)	ND	4	0
Maximum 8-Hour Concentration (ppm)	ND	0.083	0.064
Days > NAAQS (0.070 ppm)	ND	4	0
Days > CAAQS (0.070 ppm)	ND	4	0
Nitrogen Dioxide¹:			
Maximum 1-Hour Concentration (ppb)	ND	75.3	59.0
Days > NAAQS (100 ppb)	ND	0	0
Days > CAAQS (180 ppb)	ND	0	0
Inhalable Particulates (PM₁₀)²:			
Maximum 24-Hour National Measurement (ug/m ³)	72.7	68.3	48.7
Days > NAAQS (150 ug/m ³)	0	0	0
Days > CAAQS (50 ug/m ³)	2	3	0
Annual Arithmetic Mean (AAM) (ug/m ³)	21.5	26.9	23.2
Annual > NAAQS (50 ug/m ³)	No	No	No
Annual > CAAQS (20 ug/m ³)	Yes	Yes	Yes
Ultra-Fine Inhalable Particulates (PM_{2.5})²:			
Maximum 24-Hour California Measurement (ug/m ³)	30.6	63.7	42.9
Days > NAAQS (35 ug/m ³)	0	10	4
Annual Arithmetic Mean (AAM) (ug/m ³)	10.6	12.1	13.8
Annual > NAAQS and CAAQS (12 ug/m ³)	No	No	Yes

Notes: Exceedances are listed in **bold**.

Source: www.arb.ca.gov/adam/ (compiled by Vista 2023).

¹ Data obtained from the Long Beach-Signal Hill Monitoring Station.

² Data obtained from the South Long Beach Monitoring Station.

ug/m³ = micrograms per cubic meter

CAAQS = California Ambient Air Quality Standard

NAAQS = National Ambient Air Quality Standard

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

ND = no data available

ppm = parts per million

ppb = parts per billion

As articulated in Table 4.2.A, during the last 3 years, the State 1-hour concentration standard for O₃ has been exceeded between 0 and 4 days each year at the Signal Hill Station. The State and federal 8-hour O₃ standards have been exceeded between 0 and 4 days each year over the last 3 years at the Signal Hill Station. The Signal Hill Station did not record an exceedance of either the federal or State 1-hour NO₂ standards for the last 3 years. The State 24-hour concentration standard for PM₁₀ has been exceeded between 0 and 3 days each year over the past 3 years at the South Long Beach Station. Over the past 3 years, the federal 24-hour standard for PM₁₀ has not been exceeded at the South Long Beach Station. The annual PM₁₀ concentration at the South Long Beach Station has exceeded the State standard for the past 3 years and has not exceeded the federal standard for the past 3 years.

Over the past 3 years, the federal 24-hour concentration standard for PM_{2.5} has been exceeded between 0 and 10 days each year at the South Long Beach Station. The annual PM_{2.5} concentrations at the South Long Beach Station have exceeded both the State and federal standards for one of the

past 3 years. There does not appear to be a noticeable trend for PM₁₀ or PM_{2.5} in either maximum particulate concentrations or days of exceedances in the area.

4.2.3.5 Sensitive Receptors

Certain land uses are considered sensitive to air quality. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The closest off-site sensitive receptors are the residential land uses located on Peppertree Drive, approximately 220 feet (ft) northeast of proposed project boundary. The nearest school to the project site is St. John Fisher School, which is approximately 1.6 miles north of the project site.

4.2.3.6 Existing Project Site Emissions

The project site is currently undeveloped and vacant. The existing project site is characterized by public trails, vegetation, and dirt. The site contains portions of the Abalone Park and Reserve, a State Ecological Preserve. There are no current emissions associated with the undeveloped site.

4.2.4 Regulatory Setting

4.2.4.1 Federal Regulations

Clean Air Act. The USEPA is responsible for implementing the federal Clean Air Act (CAA). The federal CAA was first enacted in 1955 and has been amended numerous times in subsequent years (i.e., 1963, 1965, 1967, 1970, 1977, and 1990). The CAA authorizes the federal government to set federal air quality standards for pollutant emissions. The CAA also specifies future dates for achieving compliance with the NAAQS. Pursuant to the federal CAA, the USEPA is responsible for setting and enforcing the NAAQS for six major pollutants (O₃, CO, NO_x, SO₂, PM₁₀, PM_{2.5}, and lead), which are termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The NAAQS were amended in July 1997 to include an additional standard for O₃ and to adopt a NAAQS for PM_{2.5}. All air basins have been formally designated as attainment or nonattainment for each NAAQS. The NAAQS attainment status for the Basin was previously summarized in Table 4.2.A, above.

4.2.4.2 State Regulations

California Clean Air Act. Assembly Bill (AB) 2595, the California Clean Air Act (CCAA), was signed into law in 1988 and requires all areas of the State to achieve and maintain the CAAQS. The CCAA mandates achievement of the maximum degree of emission reductions possible from vehicular and other mobile sources in order to attain the CAAQS by the earliest practical date. CARB, which became part of the California Environmental Protection Agency (Cal/EPA) in 1991, is responsible for ensuring implementation of the CCAA and federal CAA and for regulating emissions from consumer products and motor vehicles within California. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates,

visibility, hydrogen sulfide, and vinyl chloride. However, at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the Basin because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS. All air basins have been formally designated as attainment or nonattainment for each CAAQS.

Nonattainment areas are required to prepare AQMPs that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g., motor vehicle use generated by residential and commercial development);
- A district permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and ensuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low-emission vehicles by fleet operators; and
- Sufficient control strategies to achieve a 5 percent or more annual reduction in emissions or 15 percent or more in a period of 3 years for ROGs, NO_x, CO, and PM₁₀. However, air basins may use an alternative emission reduction strategy that achieves a reduction of less than 5 percent per year under certain circumstances.

California State Implementation Plan. The CAA mandates that each state submit and implement SIPs. States containing areas violating the NAAQS are required to revise their SIPs to include additional control measures aimed at reducing air pollution. The SIP is required to include strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA reviews all SIPs to determine conformance with the CAA.

State law mandates CARB to serve as the lead agency for all purposes related to SIPs, which are prepared by local air quality districts and other agencies and submitted to CARB for review and approval. Subsequently, CARB forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The 2022 AQMP is the SIP for the Basin and is a regional blueprint for implementing air quality standards within areas under SCAQMD jurisdiction, which is discussed further below under regional regulations.

Assembly Bill 2588. The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles. On July 26, 2007, CARB adopted California Code of Regulations (CCR) Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (DPM) and NO_x emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than 5 consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to its fleet that has a Tier 0 or Tier 1 engine. By January 1, 2018, medium and large fleets will be restricted from adding Tier 2 engines to their fleets, and by January 2023, no commercial operation will be allowed to add Tier 2 engines to its fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment if they can demonstrate that the average emissions from their entire fleet emissions meet the NO_x emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets. On December 12, 2008, CARB adopted Resolution 08-43, which limits NO_x, PM₁₀, and PM_{2.5} emissions from on-road diesel truck fleets that operate in California. On October 12, 2009, Executive Order R-09-010 was adopted, which codified Resolution 08-43 into Title 13, Section 2025, of the CCR. This regulation requires that by 2023, all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or later emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NO_x emissions and 100 percent of a truck fleet to have installed BACT for PM₁₀ emissions. This regulation also provides a few exemptions, including a one-time-per-year, 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.2.4.3 Regional Regulations

South Coast Air Quality Management District. The SCAQMD is the air pollution control agency for the non desert portions of Los Angeles and San Bernardino Counties, the majority of Riverside County, and all of Orange County. The agency's primary responsibility is ensuring that the NAAQS and CAAQS are attained and maintained in the Basin. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. All projects within the Basin are subject to SCAQMD rules and regulations in effect at the time of construction.

As stated previously, the AQMP is the SIP for the Basin. The AQMP is a regional blueprint for implementing air quality standards within the Basin and some portions of the Salton Sea Air Basin that are under SCAQMD's jurisdiction. The AQMP asserts that the most effective way to reduce air pollution impacts is to reduce emissions from mobile sources. Additionally, the AQMP relies on

partnerships between governmental agencies at the federal, State, regional, and local levels. These agencies, which consist of the USEPA, CARB, local governments, the Southern California Association of Governments (SCAG), and the SCAQMD, are the primary agencies that implement the AQMP programs. The AQMP incorporates the latest scientific and technical information and planning assumptions, including SCAG’s latest Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG’s latest growth forecasts. It also includes integrated strategies and measures to meet the NAAQS.

The SCAQMD has established regional and localized significance thresholds for regulated pollutants, which are discussed below.

- Regional Significance Thresholds:** The SCAQMD regional significance thresholds for regulated pollutants are shown in Table 4.2.B. Pursuant to SCAQMD guidelines, these thresholds of significance are used to assess the impacts of project-related construction and operational emissions on regional and local ambient air quality. According to SCAQMD guidelines, any projects with daily emissions that exceed the regional thresholds of significance should be considered as having an individually and cumulatively significant air quality impact.

Table 4.2.B: SCAQMD Regional Significance Thresholds

Criteria Pollutant	Emissions Threshold (lbs/day)	
	Construction	Operation
ROG/VOC	75	55
NO _x	100	55
PM ₁₀	150	150
PM _{2.5}	55	55
SO _x	150	150
CO	550	550
Lead	3	3

Source: *Air Quality, Energy, and Greenhouse Gas Emissions Analysis Portuguese Bend Landslide Remediation Project (Vista 2023)*

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

PM_{2.5} = particulate matter less than 2.5 microns in size

ROG = reactive organic gas

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur dioxide

VOC = volatile organic compound

- Localized Significance Thresholds (LSTs):** The SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors from emissions of CO, NO_x, PM₁₀, and PM_{2.5}. LSTs represent the maximum emissions from a project that would not be expected to result in an exceedance of the NAAQS or CAAQS. LSTs are based on the location and size of the project site and the distance to the nearest sensitive receptor. For this project, a total of 37.08 acres would be potentially disturbed as part of the proposed project; however, it is unlikely that more than 5 acres would be disturbed in a day. Additionally, the project site is located in Air Monitoring Area 3, which covers southwest coastal Los Angeles County. The nearest sensitive receptors are homes on Peppertree Drive,

where construction activities would occur approximately 220 feet northeast of the project boundary.

Table 4.2.C shows the LSTs for a 5-acre project site in Air Monitoring Area 3 with sensitive receptors located within 67 meters of the project site.¹

Table 4.2.C: SCAQMD Local Significance Thresholds

Emissions Threshold (lbs/day)			
Construction / Operations			
NO _x	CO	PM ₁₀	PM _{2.5}
193 / 193	2,197 / 2,197	51 / 13	14 / 4

Source: SCAQMD Mass Rate Look-up Tables for five acres in Air Monitoring Area 3, Southwest Coastal Los Angeles County.

CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size
PM_{2.5} = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District

4.2.4.4 Local Regulations

City of Rancho Palos Verdes General Plan. The City of Rancho Palos Verdes General Plan (2018) was originally approved and adopted by the City Council on June 26, 1975

The City’s General Plan is the principal land use document guiding development within Rancho Palos Verdes. The City’s General Plan is a comprehensive plan that establishes goals, objectives, and policies intended to guide growth and development in the City. The General Plan also serves as a blueprint for development throughout the community and is the vehicle through which the community’s needs, desires, and aspirations are balanced. The Rancho Palos Verdes General Plan is the fundamental tool for influencing the quality of life in the city. The following goals and policies are related to air quality.

Safety Element. While air quality is not a State-mandated element of a general plan, the AQMP requires air quality to be addressed in general plans. Air quality is included within the Safety Element of the City’s General Plan to fulfill AQMP requirements. The Safety Element contains the following policy aimed at improving air quality:

- **Policy 35:** Implement policies and programs identified in the City’s Emissions Reduction Action Plan (ERAP) in order to improve air quality in the City.

4.2.5 Thresholds of Significance

The thresholds for air quality impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to air quality if it would:

¹ The nearest off-site sensitive receptors are homes on Peppertree Drive as near as 220 feet (67 meters) from proposed construction activities. As such, the 50-meter and 100-meter thresholds were interpolated to 67 meters.

- Threshold 4.2.1:** Conflict with or obstruct implementation of the applicable air quality plan;
- Threshold 4.2.2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Threshold 4.2.3:** Expose sensitive receptors to substantial pollutant concentrations; or
- Threshold 4.2.4:** Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

4.2.6 Project Impacts

- Threshold 4.2.1:** Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The proposed project would not conflict with or obstruct implementation of the SCAQMD AQMP. The following section discusses the proposed project's consistency with the SCAQMD AQMP. Chapter 12, Sections 12.2 and 12.3, of the SCAQMD *CEQA Air Quality Handbook* (1993) outlines two criteria for determining consistency with the 2016 AQMP. A project would be consistent with the AQMP if the project (1) would not increase the frequency or severity of an existing air quality violation, cause or contribute to new a new violation, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP; and (2) would not exceed the growth assumptions in the AQMP based on the year of project build out, would be consistent with land use planning strategies set forth by the SCAQMD, and would implement all feasible air quality mitigation measures.

Criterion 1. Based on the air quality modeling analysis contained in the *Air Quality, Energy, and GHG Impact Analysis Portuguese Bend Landslide Remediation Project* (Vista 2023), short-term regional construction air emissions would not result in significant impacts based on the SCAQMD regional thresholds of significance discussed in Table 4.2.B, above, or the local thresholds of significance discussed in Table 4.2.C, above. Since the proposed project is limited to landslide remediation activities, which are considered construction activity types, minimal operational emissions associated with operation, inspection and maintenance would be created from the proposed project. The hydrauger operation, including filling of the tanks and tank discharge, will be gravity fed and discharged. Emergency pumps on the project site would be gasoline-powered tanks. The emergency pumps would contribute a negligible amount of emissions, would not impact air quality, and would be used on an infrequent basis. Vehicle trips associated with the operation, inspection, and maintenance of the project components would be conducted on an as-needed limited basis, and are also not expected to result in a substantial increase in daily trips or operational emissions impacting air quality. Therefore, a less than significant long-term impact would occur, and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2. Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the 2016 AQMP, which is the most current

adopted AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016 AQMP was developed through use of the planning forecasts provided in the 2016 RTP/SCS and 2015 Federal Transportation Improvement Program (FTIP). The 2016 RTP/SCS is a major planning document for the regional transportation and land use network in Southern California. The 2016 RTP/SCS is a long-range plan that is required by federal and State requirements placed on SCAG and is updated every 4 years. The 2015 FTIP provides long-range planning for future transportation improvement projects that are constructed with State and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA. For this project, the City of Rancho Palos Verdes Land Use Plan defines the assumptions that are represented in the AQMP.

The General Plan Land Use Element designations within the project site consist of Residential (1–2 dwelling units per acre) and Open Space to the north, east, west, and southeast; and Open Space-Preservation (OSP) and Open Space-Hazard (OSH) to the south and southwest. The proposed project is limited to landslide remediation activities, which are allowed uses within all of the above land use designations. In addition, the proposed project would not construct any structures, which would not create any housing, nor would it create any long-term jobs, which are the growth factors utilized in the RTP/SCS.

As such, the proposed project is consistent with the current land use designations with respect to the regional forecasts utilized by the AQMPs. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Summary. The proposed project would not conflict with or obstruct implementation of the 2016 AQMP because (1) the project’s construction emissions would not exceed the SCAQMD’s regional significance thresholds, and (2) the proposed project is consistent with the current General Plan land use designations on the project site and would not exceed the growth assumptions in the AQMP. Therefore, impacts related to conflict with or obstruction of implementation of the AQMP would be less than significant, and no mitigation is required.

Threshold 4.2.2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. As stated previously, because the proposed project is limited to landslide remediation activities, which are considered construction activity types, minimal operational emissions associated with operation, inspection and maintenance would be created from the proposed project. These emissions would be related to emergency gas-powered pumps and limited vehicle trips that would contribute a negligible amount of emissions and would not impact air quality. Construction related emissions are temporary and short-term. Project-related construction emissions include those from operation of construction vehicles (i.e., excavators, trenchers, and dump trucks) and the creation of fugitive dust during clearing and grading. Construction emissions would vary daily depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts.

Regional Criteria Pollutant Emissions. The CalEEMod model has been utilized to calculate the regional criteria pollutant emissions from the proposed project. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each construction component are shown below in Table 4.2.D, and the CalEEMod daily printouts are shown in Appendix A of the *Air Quality, Energy, and GHG Impact Analysis Portuguese Bend Landslide Remediation Project (Vista 2023)*.

Table 4.2.D: Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (lbs/day) ¹					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Staging Area and Access Routes						
On Site ²	2.66	27.52	18.24	0.04	8.93	5.10
Off Site ³	0.20	8.23	2.89	0.04	1.35	0.40
Total	2.86	35.75	21.13	0.08	10.28	5.51
Surface Fracture Infilling						
On Site	1.50	14.50	14.55	0.03	3.24	1.95
Off Site	0.20	8.23	2.89	0.04	1.35	0.40
Total	1.70	22.73	17.44	0.07	4.59	2.35
Surface Water Improvements						
On Site	1.01	9.20	14.83	0.02	0.44	0.41
Off Site	0.19	8.24	2.87	0.04	1.35	0.40
Total	1.21	17.45	17.69	0.06	1.78	0.81
Hydraugers						
On Site	1.20	10.18	14.43	0.03	0.40	0.38
Off Site	0.19	8.19	2.85	0.04	1.35	0.40
Total	1.39	18.37	17.27	0.07	1.74	0.79
Maximum Daily Construction Emissions	2.86	35.75	21.13	0.08	10.28	5.51
SCAQMD Thresholds	75	100	550	150	150	55
Exceedance?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.0 (compiled by Vista 2023).

¹ Based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

² On-site emissions from equipment not operated on public roads.

³ Off-site emissions from vehicles operating on public roads.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compound

Table 4.2.D shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Local Criteria Pollutant Emissions. Construction-related air emissions may have the potential to exceed the State and federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Basin.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology)

(SCAQMD 2008). The LST Methodology found the primary criteria pollutant emissions of concern are NO_x, CO, PM₁₀, and PM_{2.5}. To determine if any of these pollutants require a detailed analysis of the local air quality impacts, each construction component was screened using the SCAQMD’s Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily on-site emissions of CO, NO_x, PM₁₀, and PM_{2.5} from the proposed project could result in a significant impact to local air quality. Table 4.2.E shows the on-site emissions from CalEEMod for the different construction components and the calculated localized emissions thresholds.

Table 4.2.E: Construction-Related Local Criteria Pollutant Emissions

Construction Component	Pollutant Emissions (lbs/day) ¹			
	NO _x	CO	PM ₁₀	PM _{2.5}
Staging Area and Access Routes	27.72	18.31	8.96	5.11
Surface Fracture Infilling	14.69	14.62	3.27	1.96
Surface Water Improvements	9.40	14.89	0.47	0.42
Hydraugers	10.38	14.49	0.43	0.39
Maximum Daily Construction Emissions	27.72	18.31	8.96	5.11
SCAQMD Thresholds²	193	2,197	51	14
Exceedance?	No	No	No	No

Source: Calculated from SCAQMD’s Mass Rate Look-up Tables for 5 acres in Air Monitoring Area 3, Southwest Coastal Los Angeles County (compiled by Vista 2023).

¹ Based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403. The Pollutant Emissions include 100% of the on-site emissions (off-road equipment and fugitive dust) and 2.4% of the off-site emissions (on-road trucks and worker vehicles) in order to account for the on-road emissions that occur within 0.25 mile of the project site.

² The nearest off-site sensitive receptors are homes on Peppertree Drive as near as 220 feet (67 meters) from the proposed construction activities. As such, the 50-meter and 100-meter thresholds were interpolated to 67 meters.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

The data provided in Table 4.2.E show that none of the analyzed criteria pollutants would exceed the local emissions thresholds. Tables 4.2.D and E report slightly different results due to model inputs, which are described in the notes following each table.

Therefore, a less than significant local air quality impact would occur from construction of the proposed project. The proposed project would remain consistent with Regulatory Compliance Measures **RCM AQ-2**, **RCM AQ-3**, and **RCM AQ-4** to control fugitive dust and VOC emissions. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. As previously described, the SCAQMD has issued guidance on applying CalEEMod modeling to LSTs for projects greater than 5 acres. Further, CalEEMod calculates construction emissions based on the number of equipment hours and the

maximum daily soil disturbance activity possible for each piece of equipment. The local concentrations of criteria pollutant emissions produced in the vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations, have been calculated above in Table 4.2.E for construction. The nearest sensitive receptors are homes on Peppertree Drive, where construction activities would occur as close as 220 feet from the homes.

Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant (TAC) emissions created from on-site construction equipment, which are described below.

Local Criteria Pollutant Impacts. The local air quality impacts from construction of the proposed project have been analyzed above in Threshold 4.2.2. The analysis found that the construction of the proposed project would not exceed the local NO_x, CO, PM₁₀, and PM_{2.5} thresholds of significance discussed above in Table 4.2.E. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality, and no mitigation would be required.

Toxic Air Contaminant Impacts. The greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk.” Individual cancer risk is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30-year exposure period for the nearby sensitive receptors (OEHHA 2015).

Given the relatively limited amount of heavy-duty construction equipment, the varying distances that construction equipment would operate from the nearby sensitive receptors, and the short-term construction schedule (6 to 7 months), the proposed project would not result in a long-term (30 or 70 years) substantial source of TAC emissions and corresponding individual cancer risk. In addition, CCR Title 13, Article 4.8, Chapter 9, Section 2449, regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than 5 minutes and requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet’s usage and emissions. The regulation also requires systematic upgrading of the emission tier level of each fleet. Currently, no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment, and as of January 2023, no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between 2014 and 2023. As of January 2019, 25 percent or more of all contractors’ equipment fleets must be Tier 2 or higher. Therefore, no significant short-term TAC impacts from DPM emissions would occur during construction of the proposed project.

Minimal operational emissions associated with operation, inspection and maintenance would be created from the proposed project. The hydrauger operation, including filling of the tanks and tank discharge, will be gravity fed and discharged, however, emergency pumps on the project site would be gasoline powered tanks. The emergency pump use would be minimal and would not expose any sensitive receptors to substantial pollutant concentrations. Additionally, a limited number of vehicle

trips would be associated with the operation, inspection, and maintenance of the project components and would be conducted on a limited as-needed basis. The vehicle trips would also not be expected to expose any sensitive receptors to substantial pollutant concentrations.

As such, the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. The local concentrations of criteria pollutant emissions and TAC emissions that may adversely impact a substantial number of people have been analyzed above in Threshold 4.2.3 for both construction and operations. The analysis found that these types of emissions would create less than significant impacts. As such, the following analysis is limited to odors that would have the potential to adversely affect a substantial number of people.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors, such as frequency, intensity, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. Intensity refers to an individual's or group's perception of the odor's strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people who live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality; this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

Potential sources that may emit odors during construction and operation activities include the application of coatings such as asphalt pavement and solvents and emissions from diesel equipment and the use of the gas-powered emergency pumps. Standard construction requirements that limit the time of day when construction may occur, as well as SCAQMD Rule 1113, which limits the VOC content in solvents would minimize odor impacts from construction. Therefore, the project would remain consistent with **RCM AQ-3** to limit VOC content in coatings and solvents. Additionally, **RCM AQ-1** would be implemented to prohibit the discharge of any air contaminants that would cause a nuisance to the public including those that may be emitted from the emergency pumps. As such, the

objectionable odors that may be produced during the construction process and operation would be temporary or negligible and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance with the applicable regulations that reduce odors, and due to the transitory nature of construction odors, a less than significant odor impact would occur, and no mitigation would be required.

4.2.7 Level of Significance Prior to Mitigation

There would be no potentially significant impacts related to air quality.

4.2.8 Regulatory Compliance Measures and Mitigation Measures

4.2.8.1 Regulatory Compliance Measures

The proposed project would comply with the following Regulatory Compliance Measures.

RCM AQ-1 South Coast Air Quality Management District (SCAQMD) Rule 402, Nuisance. Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. The proposed project would comply with Rule 402 during project construction and operation by minimizing the sources for air contaminants that would endanger the public. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

RCM AQ-2 SCAQMD Rule 403, Fugitive Dust. The City Engineer, or designee, shall ensure the construction contractor implements fugitive dust control measures in compliance with SCAQMD Rule 403 during construction. The following fugitive dust control measures for SCAQMD Rule 403 shall be included in the project plans and specifications approved by the City Engineer:

- All clearing, grading, earthmoving, or excavation activities shall cease when winds exceed 25 miles per hour (mph), per SCAQMD guidelines, in order to limit fugitive dust emissions.
- The construction contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project site are watered, with complete coverage of disturbed areas, at least three times daily during dry weather and preferably mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 10 mph or less.

RCM AQ-3 SCAQMD Rule 1113. The City Engineer, or designee, shall ensure the construction contractor implements measures to control volatile organic compound (VOC)

emissions from architectural coatings in compliance with SCAQMD Rule 1113 during construction. The following control measure for SCAQMD Rule 1113 compliance in the project plans and specifications approved by the City Engineer:

- Only “Low-Volatile Organic Compounds” paints (no more than 50 grams/liter of VOC) shall be used.

4.2.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.2.9 Level of Significance after Mitigation

The proposed project would have no significant unavoidable adverse impacts related to air quality. No mitigation would be required.

4.2.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for air quality. The cumulative impact area for air quality related to the proposed project is the Basin.

Air pollution is inherently a cumulative impact measured across an air basin. The discussion under Threshold 4.2.2, above, includes an analysis of the proposed project’s contribution to cumulative air impacts. To summarize the conclusion with respect to that analysis, the incremental effect of projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable per SCAQMD guidelines. The proposed project’s construction-related regional daily emissions are less than the SCAQMD significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations would substantially reduce potential impacts associated with the related cumulative projects and Basin-wide air pollutant emissions. Therefore, the proposed project would not have a cumulatively considerable increase in emissions, and the proposed project’s cumulative air quality impacts would be less than significant. No mitigation is required.

4.3 BIOLOGICAL RESOURCES

This section provides a discussion of the existing biological resources within the boundaries of the Portuguese Bend Landslide Remediation Project (proposed project) site and provides an analysis of potential impacts to biological resources from implementation of the project. Where impacts are identified, mitigation measures pursuant to the California Environmental Quality Act (CEQA), the State and federal Endangered Species Acts (CESA and FESA, respectively), and other pertinent regulations are recommended. The biological resources section is based on the information and findings of the *Biological Technical Report for the Portuguese Bend Landslide Remediation Project – Rancho Palos Verdes, California* (Biological Technical Report) (Chambers Group, Inc. 2023), which is provided in Appendix C of this Environmental Impact Report (EIR).

4.3.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Thirteen comment letters included comments related to biological resources.

One comment letter received by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) noted the concern and mandate for the protection of public fish and wildlife resources and their habitats in the project area. Further, the agencies noted that the City must ensure and verify that the Draft EIR for the proposed project implements all of the requirements, conditions, and applicable avoidance and minimization measures of the City's Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), associated Implementing Agreement (IA), and Section 10 Incidental Take Permit issued to the City by USFWS. In this comment letter, both agencies also offered comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources and to ensure that the project is consistent with the requirements of the NCCP/HCP. These will be incorporated into the environmental analysis provided below.

One comment letter received by the Palos Verdes Peninsula Land Conservancy (PVPLC) requests that per the NCCP/HCP, the EIR should evaluate the temporary construction as well as permanent impacts to habitat and trails that may be caused by the various landslide mitigation strategies, noting that temporary impacts will require replacement of native habitat in situ to restore areas to their original condition. The PVPLC letter also notes that all construction activities and permanent habitat impacts must follow NCCP/HCP minimization measures and environmental considerations, which include avoiding impacts to native plants and covered species to the maximum extent possible.

Letters received by Unknown, as well as general public members N. Park and A. and B. Sattler, also expressed concern for impacts to coastal sage scrub (CSS) habitats that exist within the Palos Verdes Nature Preserve (Preserve) and call for the relocation and restoration, as appropriate, of these habitats in order to minimize impacts to CSS within the Preserve to the maximum extent possible.

Another letter received by K. Dyda questions what the temporary incremental difference of impacting biological resources will be as compared to what has already occurred within the project area to date. In this comment letter, Dyda also asks how mitigation measures identified for the current project will reduce and mitigate the loss of biological resources.

Seven comment letters received by individuals from the general public expressed concerns regarding the proposed project encroaching on current habitat areas located within the Preserve, calling for the proposed project to adhere to any applicable habitat protection policies from the City's 1984 Trails Network Plan to the maximum extent possible.

4.3.2 Methodology

4.3.2.1 Literature Review and Records Search

Chambers Group, Inc., biologists conducted a literature review and records search in August 2022 to identify the existence and potential for occurrence of sensitive or special-status¹ plant and animal species in the vicinity of the Project Site. Federal and State lists of sensitive species were also examined. Current electronic database records reviewed included the following:

- The **California Natural Diversity Data Base (CNDDB)**, which is administered by the CDFW, formerly known as the California Department of Fish and Game (CDFG). This database covers sensitive plant and animal species as well as sensitive natural communities that occur in California. Records from four United States Geological Survey (USGS) quadrangles surrounding the Project Site (*San Pedro, Redondo Beach, Long Beach, and Torrance*) were obtained from this database.
- The **California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants**, which utilizes four specific categories or "lists" of sensitive plant species to assist with the conservation of rare or endangered botanical resources. All of the plants constituting California Rare Plant Ranks 1A, 1B, 2A, and 2B are intended to meet the status definitions of "threatened" or "endangered" in CESA and the California Department of Fish and Game Code, and are considered by CNPS to be eligible for State listing. At the discretion of the CEQA Lead Agency, impacts to these species may be analyzed as such, pursuant to the *State CEQA Guidelines* Sections 15125(c) and 15380. Plants in Rank 3 (limited information; review list), Rank 4 (limited distribution; watch list), or that are considered Locally Unusual and Significant may be analyzed under CEQA if there is sufficient information to assess potential significant impacts. Records from the four USGS quadrangles surrounding the Project Site were obtained from this database.

¹ For the purposes of this report, the term "special-status species" refers to those species that are listed or proposed for listing under CESA and/or FESA or as California Fully Protected Species, California Species of Special Concern, plants with a California Rare Plant Rank of 1–3, and species covered under the City's NCCP/HCP. It should be noted that "Species of Special Concern" is an administrative designation made by the CDFW and carries no formal legal protection status. However, Section 15380 of the *State CEQA Guidelines* indicates that these species should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

- The **USFWS Critical Habitat Mapper** was reviewed to determine whether critical habitat has been designated within or in the vicinity of the Project Site (USFWS 2022a).
- The **USFWS National Wetlands Inventory** was reviewed to determine whether any wetlands or surface waters of the United States have been previously identified in the Biological Survey Area footprint (approximately 206.5 acres) (USFWS 2022b).

In addition to the databases listed above, historic and current aerial imagery, soil maps for Los Angeles County, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, and regional HCPs and local land use policies related to biological resources were reviewed.

4.3.2.2 Biological Field Surveys

A general biological reconnaissance survey of the Project Site was conducted on August 5, 2020. The entire Project Site was surveyed on foot, and all biological resources were noted and mapped. Suitable habitat for any species of interest or concern was duly noted, and general site conditions were photographed. A delineation of potential jurisdictional aquatic resource areas within the Project Site was conducted by qualified biologists on August 16, 2022. Please see Appendix C to this EIR for further details regarding the methodologies employed during the field surveys.

4.3.3 Existing Environmental Setting

4.3.3.1 Existing Project Site

The “Biological Survey Area” refers to approximately 206.5 acres of the Portuguese Bend Landslide (PBL) Complex that was studied as part of completing the biological resources assessment for the project, which would be constructed within distinct portions of the Biological Survey Area. The Biological Survey Area includes approximately 104 acres of land located within the City-owned Preserve, specifically within the Portuguese Bend Reserve and Abalone Cove Reserve, which are sub-areas of the approximately 1,500-acre NCCP/HCP Preserve. The PVPLC is the Preserve Habitat Manager pursuant to the City Council-adopted NCCP/HCP. The terminus of the active landslide complex, and generally the southwest boundary of the PBL, is the Pacific Ocean.

Surrounding the Project Site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the Project Site is Klondike Canyon, and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the Project Site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the Project Site. Several residences exist adjacent to the northwestern boundary of the Project Site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community and the Portuguese Bend Beach Club.

Public trails within the Abalone Cove Reserve are located on the eastern side of the Project Site, seaward of Palos Verdes Drive South. Public trails within the Portuguese Bend Reserve are located on the northern side of the Project Site. Additional trails within the City’s open space area near the archery range also fall within the Project Site on the seaward side of Palos Verdes Drive South.

Vegetation within the Biological Survey Area consists of 13.58 acres of Saltbrush Scrub, 114.07 acres of Undifferentiated CSS, 5.37 acres of *Rhus*-Dominated CSS, 32.93 acres of Exotic Woodland, and 11.40 acres of disturbed vegetation. Due to the land movement, surface fractures exist throughout the site. The southern end of the Project Site contains several coastal bluffs abutting the Pacific Ocean. Access to the Project Site is provided via Palos Verdes Drive South. For a detailed list of all vegetation and land cover types within the Biological Survey Area, refer to Table 4.3.A, below.

Table 4.3.A: Vegetation and Land Cover Types Within the Biological Survey Area

Vegetation/Land Cover Type	Acreage ¹
Native Vegetation Communities	
Coastal Sage Scrub – Undifferentiated	114.07
Coastal Sage Scrub – <i>Rhus</i> -Dominated	5.37
Saltbrush Scrub	13.58
Total Acreage for Native Vegetation Communities	133.02
Nonnative Vegetation Communities and Bare Ground/Development Areas	
Disturbed Vegetation	11.40
Exotic Woodland	32.93
Development (buildings, ornamental landscaping, roadways, and hiking trails)	26.90
Rocky Shore	2.22
Total Acreage for Nonnative Vegetation Communities	73.45
Total for All Vegetation Communities	206.46

Source: *Biological Technical Report for the Portuguese Bend Landslide Remediation Project – Rancho Palos Verdes, California* (Chambers Group, Inc., October 2022).

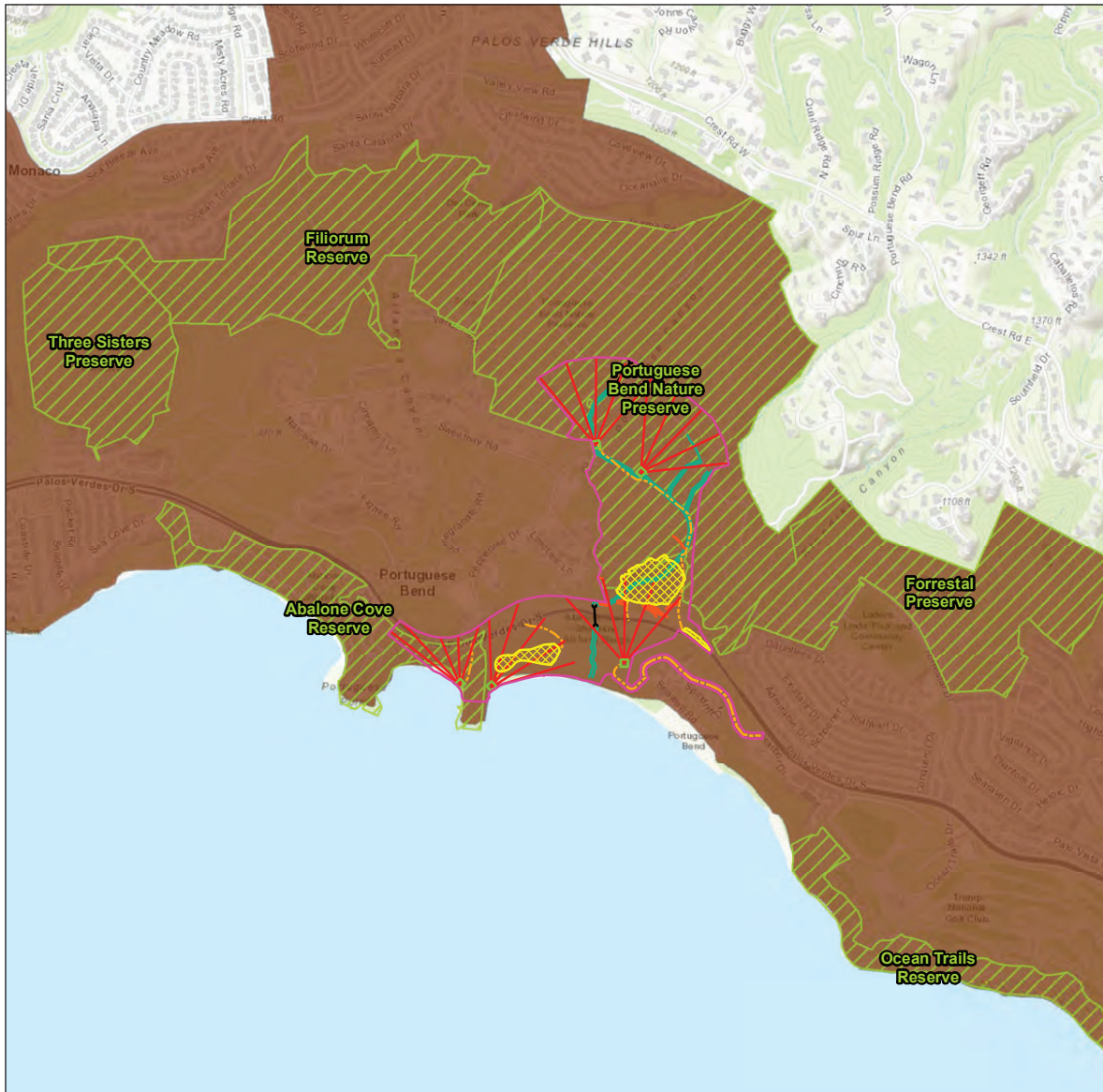
¹ All presented acreages are approximate and based on geographic information system measurements.











As noted above, the Biological Survey Area includes approximately 104 acres of land located within the City-owned Preserve, which encompasses areas that are part of the Portuguese Bend Reserve and the Abalone Cove Reserve. Both reserves are managed by the City, with the PVPLC serving as the City's Preserve Habitat Manager. The map provided in Figure 4.3-1, Palos Verdes Nature Preserve Areas, showcases the Project Site in relation to the size of the nearby Preserve areas.

Further details regarding biological resources currently present on the site are provided in the following subsections.

4.3.3.2 Vegetation Communities and Land Cover Types

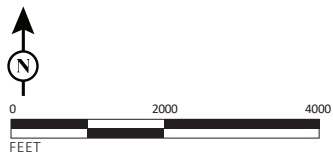
All plant species observed within the Biological Survey Area were recorded. Vegetation communities within the Biological Survey Area were identified, qualitatively described, and mapped onto a high-resolution imagery aerial photograph. Plant communities were determined in accordance with the *Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) and then adapted to fit the Rancho Palos Verdes NCCP/HCP habitat classifications. Plant nomenclature follows that of *The Jepson Manual* (Baldwin et al. 2012). Table 4.3.A, below, provides the acreages of vegetation communities and other land cover types mapped within the Biological Survey Area. A comprehensive list of the vegetation communities observed during the survey is provided on Figure 4.3-2, Vegetation Communities.



-  Proposed Project Limit
-  Proposed Hydrauger Work Locations
-  Staging Area/Work Location
-  Proposed Hydrauger Arrays
-  Approximate Surface Fracture Locations
-  Proposed Access Route
-  Proposed Culvert
-  Proposed Swale
-  Reserves/Preserves
-  City of Rancho Palos Verdes NCCP/HCP

All features are approximate

LSA



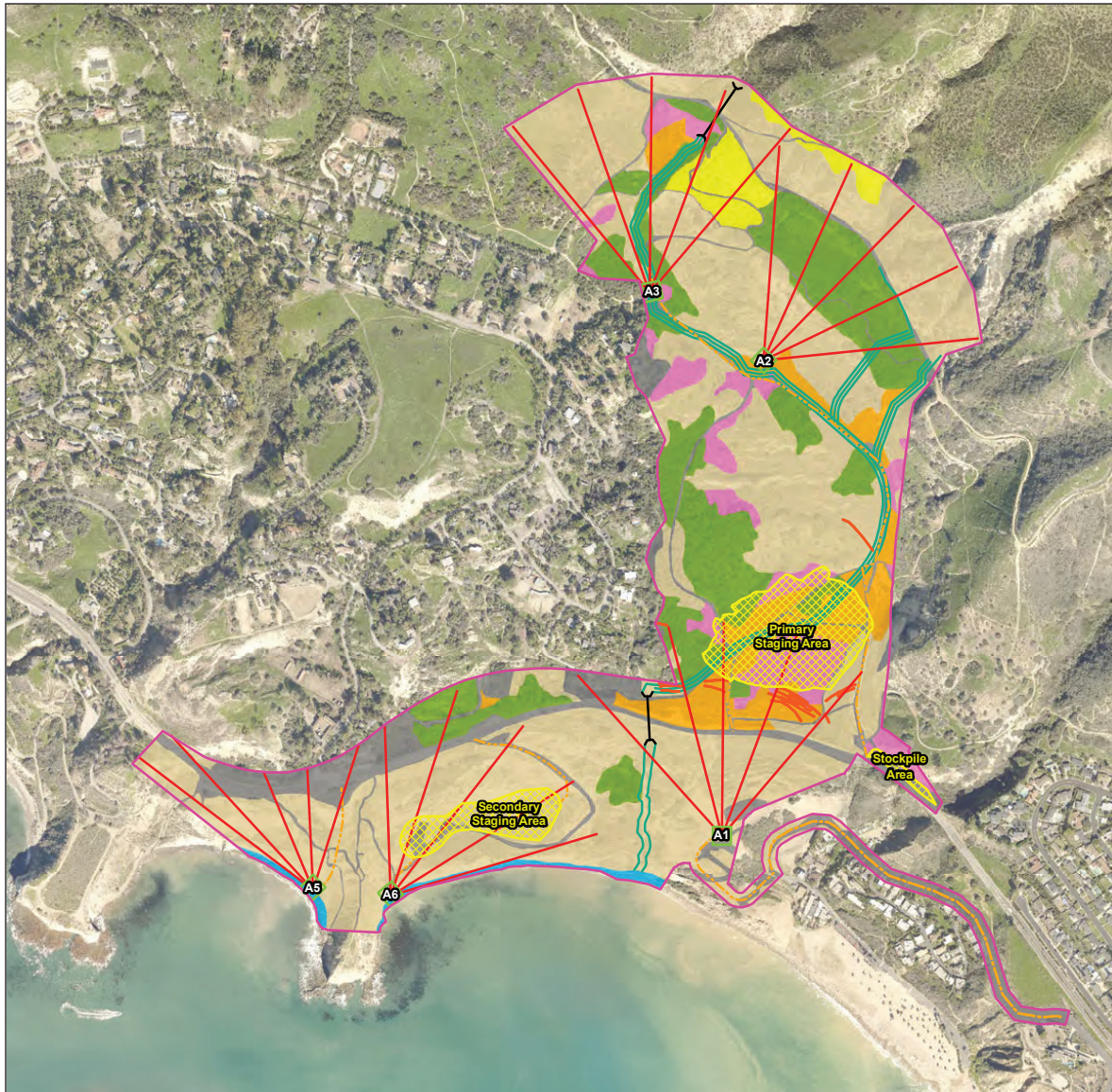
SOURCE: Chambers Group, November 2022

I:\PVE2202\G\Palos Verdes Nature Preserve Areas.ai (1/26/2023)

FIGURE 4.3-1

Portuguese Bend Landslide Remediation Project
Palos Verdes Nature Preserve Areas

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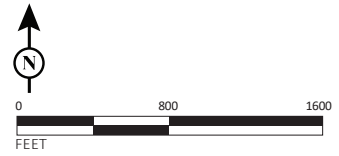


- Proposed Project Limit
 - Proposed Hydrauger Work Locations
 - Staging Area/Work Location
 - Proposed Hydrauger Arrays
 - Approximate Surface Fracture Locations
 - Proposed Access Route
 - Proposed Culvert
 - Proposed Swale
- Vegetation Communities**
- Coastal Sage Scrub – Rhus Dominated
 - Coastal Sage Scrub – Undifferentiated
 - Saltbush Scrub
 - Exotic Woodland
 - Disturbed Vegetation
 - Developed
 - Rocky Shore

All features are approximate

FIGURE 4.3-2

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Coastal Sage Scrub – Undifferentiated. Undifferentiated CSS is characterized by a highly plastic matrix of species dominance or codominance with a similar species composition throughout; this habitat is similar in composition to the Holland classification of Venturan Sagebrush Scrub (Holland 1986). This habitat is typically associated with low-elevation coastal areas, and it consists of a mosaic of species dominance and abundance when examined on a fine scale but retains a generally similar composition when viewed on a larger scale. This habitat is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Species abundance and composition within the habitat is largely dependent on abiotic factors as well as disturbance frequency and scale and the presence of nonnative invasive species in adjacent areas. Areas of low native shrub density are typically dominated by invasive nonnative species and are typically associated with fringe habitat areas associated with trails and existing infrastructure. Root depth of species within this habitat are typically shallow and fibrous (McDonald and Hughes 1968), with some species, such as laurel sumac (which is not dominant in the landscape), potentially exhibiting deeper root systems that range from 6 to 13 meters deep (DeSouza, Silka, and Davis 1986; Canadell et al. 1996).

Undifferentiated CSS within the Biological Survey Area is dominated by California sagebrush (*Artemisia californica*), big saltbush (*Atriplex lentiformis*), coyote bush (*Baccharis pilularis*), lemonade berry (*Rhus integrifolia*), black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), purple sage (*Salvia leucophylla*), bladderpod (*Peritoma arborea*), fennel (*Foeniculum vulgare*), California brittlebush (*Encelia californica*), tocalote (*Centaurea melitensis*), and California buckwheat (*Eriogonum fasciculatum*). There are 114.07 acres of Undifferentiated CSS within the survey area. A total of 3.30 acres of this habitat is located within the anticipated project permanent impact areas, and 1.45 acres is located within the anticipated project temporary impact areas.

Coastal Sage Scrub – *Rhus*-Dominated. *Rhus*-Dominated CSS is similar to the Undifferentiated CSS described above; however, the dominant shrub species throughout this habitat is lemonade berry. *Rhus*-Dominated CSS within the anticipated Biological Survey Area is dominated by lemonade berry and California sagebrush, with big saltbush, coyote bush, black mustard, short-pod mustard, purple sage, bladderpod, fennel, California brittlebush, tocalote, and California buckwheat also present. There are 5.37 acres of *Rhus*-Dominated CSS within the survey area. No impacts to this vegetation community are anticipated.

Saltbrush Scrub. Saltbrush Scrub is typically characterized by sparse to moderately dense stands dominated by big saltbush less than 5 meters in height with an intermittent to open canopy. Plants are long-lived and resistant to salt, cold, and drought; they tolerate saline and alkaline soils, but they are not necessarily an indicator of these conditions (McDonald and Hughes 1967). The herbaceous layer is variable, with associated species being highly variable due to the wide geographic range of this alliance. Overall, shrublands in this alliance occur on lowland sites with elevations ranging from 0 feet to 557 feet. Dominant species within this habitat typically have shallow root systems that primarily subsist on surface water, with water subsurface water availability contributing to increased water uptake but not necessarily increased vegetative density or volume (McDonald and Hughes 1967).

Saltbrush Scrub is present within the Biological Survey Area. Big saltbush is dominant in the shrub canopy, with coyote bush present at lower cover. The herbaceous layer is variable, with nonnatives

including black mustard, tocalote, telegraph weed (*Heterotheca grandiflora*), and smilo grass (*Stipa miliacea*) dominating and isolated patches of native grasses such as California melic (*Melica imperfecta*) scattered throughout. Saltbush Scrub constitutes 13.58 acres of habitat within the survey area. A total of 4.50 acres of this habitat is located within the anticipated project permanent impact areas, and 0.43 acre is located within the anticipated project temporary impact areas.

Disturbed Vegetation. Disturbed Vegetation refers to a typically nonnative vegetation community that occurs in heavily disturbed areas and is characterized by weedy and ruderal species. It can be dominated by a variety of species in the mustard family, all of which are generally open-branched, tall (3 to 10 feet), aromatic, fast-growing annuals or short-lived perennials that are generally nonnative. Mustard species typically form dense colonies that overtop other plants with cover varying from open to continuous. All respond positively to regular frequent disturbance, whether it be fire, disking, intermittent flooding, or heavy grazing, and often produce a large amount of seed annually that is retained within the seed bank. Disturbed vegetation can often increase fire fuel loads and fire intensity due to the buildup of typically annual vegetation, especially in areas already altered by nonnative grass presence.

Disturbed vegetation within the Biological Survey Area is dominated by black mustard, with ruderal forbs and nonnatives such as common sowthistle (*Sonchus oleraceus*), tocalote, wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), and castor bean (*Ricinus communis*) present throughout the herbaceous layer. Emergent shrubs such as Australian saltbush (*Atriplex semibaccata*) are present at low cover. Disturbed vegetation is present within 11.40 acres of the survey area. A total of 4.0 acres of this habitat is located within the anticipated project permanent impact areas, and 0.03 acre is located within the anticipated project temporary impact areas.

Exotic Woodland. Exotic woodland includes nonnative trees and shrubs that were introduced into residential areas and have since dispersed to nearby natural areas. Within the Biological Survey Area, these areas are characterized by groves of escaped or naturalized cultivars of Cyclops acacia (*Acacia cyclops*) that may be dominant or co-dominant with other nonnative species. Exotic Woodland habitat is found in California in coastal canyons, washes, slopes, riparian areas, and roadsides between 605 and 985 feet in elevation. Exotic woodlands are generally drought-tolerant and prefer moist to dry soils that are loamy or sandy in texture.

Exotic woodland is present within the anticipated Biological Survey Area and is largely dominated by cyclops acacia, with some areas being co-dominated by cyclops acacia and Peruvian pepper tree (*Schinus molle*). Overall vegetation density is high, and when present, shrub cover consists largely of a mix of native species with isolated stands of coyote bush and lemonade berry. The herbaceous layer is dominated by annuals and nonnatives, including black mustard, tocalote, and wild oat. There are 32.93 acres of exotic woodland within the Biological Survey Area. A total of 2.12 acres of this habitat is located within the anticipated project permanent impact areas, and 0.75 acre is located within the anticipated project temporary impact areas.

Development (Buildings, Ornamental Landscaping, Roadways, and Hiking Trails). Developed areas are those areas that have been significantly altered from their natural state by humans and now display man-made structures such as houses, dirt roads, buildings, parks, and other maintained or landscaped areas. Developed areas are present within the Biological Survey Area and consist

primarily of residential uses and formally landscaped areas dominated by irrigated nonnatives that provide an altered ecological functionality compared to habitat within the surrounding open space, as well as dirt access roads, trails, roadways and, other hardscapes.

Developed areas are located within the Project Site. There are 26.90 acres of developed land within the Biological Survey Area. A total of 3.07 acres of this habitat is located within the anticipated project permanent impact areas, and 0.29 acre is located within the anticipated project temporary impact areas.

Rocky Shore. Rocky Shore habitat refers to areas at the bases of cliffs that are characterized by lava flows, sedimentary bedding, and loose cobbles. Constant erosion from wind, waves, and rain prevents vegetation establishment. Typically, there is little soil available for plants to become established. This form of bare ground/development habitat is located within the Biological Survey Area, primarily within the southern portions of the proposed project area along the base of the bluff. This habitat type does not depict high or low tidal zones and designates rocky substrate for habitat value only.

Rocky Shore habitat is within the Project Site for Hydraulics A5 and A6 and the proposed swale feature. There are 2.22 acres of Rocky Shore within the Biological Survey Area. A total of 0.19 acre of this habitat is located within the anticipated project permanent impact area.

4.3.3.3 Soils

According to the results from the USDA NRCS Web Soil Survey (USDA 2022), six soil types are known to occur within and/or adjacent to the site and are described below.

- **Haploxerepts Soil (10 to 35 percent slopes):** Occurs throughout the majority of the Biological Survey Area. The parent material is mixed slide deposits derived from calcareous shale. This is a well-drained soil with no frequency of ponding and is not hydric. The available water capacity is classified as moderate (approximately 8.3 inches), with a depth to the water table of more than 80 inches (USDA 2022).
- **Zaca-Ballast Complex (10 to 50 percent slopes):** Occurs in the northwestern portion of the Biological Survey Area. The parent material is colluvium and/or slump block derived from calcareous shale. This is a well-drained soil with no frequency of ponding and is not hydric. The available water capacity is high (approximately 9.9 inches), with a depth to the water table of more than 80 inches (USDA 2022).
- **Urban Land-Filiorum Complex (2 to 9 percent slopes):** Occurs in the southeastern portion of the Biological Survey Area. The parent material is discontinuous human-transported material over colluvium and/or residuum weathered from calcareous shale. This is a well-drained soil with no frequency of ponding and is not hydric. The available water capacity is high (approximately 9.6 inches), with a depth to the water table of more than 80 inches (USDA 2022).
- **Urban Land-Dapplegray Complex (5 to 20 percent slopes, terraced):** Occurs in the southeastern portion of the Biological Survey Area. The parent material is human-transported material

consisting mostly of colluvium and/or residuum weathered from calcareous shale. This is a well-drained soil with no frequency of ponding and is not hydric. The available water capacity is moderate (approximately 8.4 inches), with a depth to the water table of more than 80 inches (USDA 2022).

- **Urban Land-Dapplegray Complex (20 to 55 percent slopes):** Occurs in the northeastern portion of the Biological Survey Area. The parent material is human-transported material consisting mostly of colluvium and/or residuum weathered from calcareous shale. This is a well-drained soil with no frequency of ponding and is not hydric. The available water capacity is moderate (approximately 8.4 inches), with a depth to the water table of more than 80 inches (USDA 2022).
- **Beaches and Rocky Soils:** Occur in the southern portion of the site along the Pacific Ocean. The parent material is beach sand with no hydric soil rating.

4.3.3.4 Special-Status Biological Resources

Rancho Palos Verdes supports various special-status natural communities, plants, and animals. The following provides specific discussions for special-status plant and animal species, and habitats of concern (including critical habitat, jurisdictional aquatic resources, wildlife movement corridors, and regional and local HCPs) in the project area.

The literature review conducted for the Project Site included occurrence records from four USGS topographic quadrangles surrounding the site. A four-quadrangle search covers a large geographic area containing numerous habitat types not found within or around the Project Site. As such, many of the species identified in the literature search are not anticipated to occur on the Project Site due to historic and ongoing anthropogenic disturbances and/or the lack of suitable habitat. Refer to the Biological Technical Report for definitions and specific criteria related to the resources described below.

Special-Status Plants. Based on the current database searches (CDFW 2022; CNPSEI 2022), a total of 23 federally and/or State-listed threatened and endangered or rare special-status plant species potentially occur within the project vicinity. After the literature review and the reconnaissance-level survey, it was determined that seven species are absent from the Biological Survey Area and eight species have a low potential to occur, five species have a moderate potential to occur, and three species have a high potential to occur within the Biological Survey Area. Factors used to determine the potential for occurrence included an assessment of the quality of habitat, the site elevation, and the results of the field surveys.

Based on analysis of the CNDDDB records search and field survey results, eight species were determined to have a low potential to occur in the Biological Survey Area due to a lack of suitable habitat, including soil conditions on the Biological Survey Area, only poor-quality habitat being present within the Biological Survey Area, and/or no historical populations being found within 5 miles of the Biological Survey Area. The following species have a low potential to occur:

- Davidson's saltscare (*Atriplex serenana* var. *davidsonii*)
- Smooth tarplant (*Centromadia pungens* subsp. *laevis*)

- Catalina crossosoma (*Crossosoma californicum*)
- Beach spectaclepod (*Dithyrea maritima*)
- Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)
- Prostrate vernal pool navarretia (*Navarretia prostrata*)
- Lyon's pentachaeta (*Pentachaeta lyonii*)
- San Bernardino aster (*Symphotrichum defoliatum*)

The analysis of the CNDDDB search and field survey resulted in five species with a moderate potential to occur in the Biological Survey Area. These are described below.

Coulter's Saltbush (*Atriplex coulteri*). This species is a perennial herb in the Chenopodiaceae family that blooms from March to October. This species occurs in coastal bluffs and CSS habitats below 1,509 feet elevation. The survey was conducted within the blooming period of this species and the species was not observed. However, focused special-status plant surveys, which require 100 percent coverage transects, were not conducted; therefore, this species could occur within the Biological Survey Area. Appropriate coastal scrub and coastal bluff habitat occurs within the Biological Survey Area, and CNDDDB records indicate a historic population within 5 miles of the Biological Survey Area. Therefore, there is a moderate potential for this species to occur within the Biological Survey Area. This species is not an NCCP/HCP-covered species.

Island Green Dudleya (*Dudleya virens* subsp. *insularis*). This species is a perennial herb in the Crassulaceae family that blooms from April to June. This species occurs on coastal bluffs in the Palos Verdes Hills and on Santa Catalina and San Nicolas Islands. The survey was conducted outside the blooming period of this species and the species was not observed. Appropriate coastal scrub and coastal bluff habitat occurs within the Biological Survey Area and CNDDDB records indicate a historic population within 3 miles of the Biological Survey Area. Therefore, there is a moderate potential for this species to occur within the coastal bluffs of the Biological Survey Area. This species is an NCCP/HCP-covered species.

Parish's Brittlebush (*Atriplex parishii*). This species is an annual herb in the Chenopodiaceae family that blooms from June to October. This species occurs in alkaline or clay soils, often within chenopod scrub, playas, or vernal pools below 6,233 feet elevation. The survey was conducted during the blooming period of this species and the species was not observed. However, focused special-status plant surveys, which require 100 percent coverage transects, were not conducted; therefore, this species could occur within the Biological Survey Area. There are appropriate soil conditions within the Biological Survey Area, and CNDDDB records indicate a historic population within 5 miles of the Biological Survey Area. Therefore, there is a moderate potential for this species to occur within the Biological Survey Area. This species is not an NCCP/HCP-covered species.

Mesa Horkelia (*Horkelia cuneata* var. *puberula*). This species is a perennial herb in the Rosaceae family that blooms from February to September. This species occurs in coastal scrub, maritime chaparral, and cismontane woodland below 2,657 feet elevation. The survey was conducted during the blooming period of this species and the species was not observed. However, focused special-status plant surveys, which require 100 percent coverage transects,

were not conducted; therefore, this species could occur within the Biological Survey Area. There is appropriate coastal scrub within the Biological Survey Area, and CNDDDB records indicate a historic population within 2 miles of the Biological Survey Area. Therefore, there is a moderate potential for this species to occur within the Biological Survey Area. This species is not an NCCP/HCP-covered species.

Brand's Star Phacelia (Phacelia stellaris). This species is an annual herb in the Hydrophyllaceae family that blooms from March to June. This species occurs in coastal dunes and coastal scrub below 1,312 feet elevation. The survey was conducted outside the blooming period of this species; however, there is appropriate coastal scrub habitat within the Biological Survey Area, and CNDDDB records indicate a historic population within 5 miles of the Biological Survey Area. Therefore, there is a moderate potential for this species to occur within the Biological Survey Area. This species is not an NCCP/HCP-covered species.

The analysis of the CNDDDB search and field survey resulted in three species with a high potential to occur in the Biological Survey Area. These species are described below:

Aphanisma (Aphanisma blitoides). This species is an annual herb in the Chenopodiaceae family that blooms from March to June. This species occurs in coastal bluffs and CSS habitats below 656 feet elevation. The survey was conducted outside the blooming period of this species; however, appropriate coastal bluff habitat occurs within the Biological Survey Area, and CNDDDB records indicate a historic population, present as of 2015, within the boundaries of the Biological Survey Area. Therefore, there is a high potential for this species to occur within the Biological Survey Area. This species is an NCCP/HCP-covered species.

South Coast Saltscare (Atriplex pacifica). This species is an annual herb in the Chenopodiaceae family that blooms from June to October. This species occurs in coastal bluff scrub, coastal scrub, and coastal dunes below 984 feet elevation. The survey was conducted during the blooming period of this species and the species was not observed. However, focused special-status plant surveys, which require 100 percent coverage transects, were not conducted; therefore, this species could occur within the Biological Survey Area. There is appropriate coastal bluff scrub and coastal scrub habitat within the Biological Survey Area, and CNDDDB records indicate a historic population, present as of 2009, within the boundaries of the Biological Survey Area. Therefore, there is a high potential for this species to occur within the Biological Survey Area. This species is an NCCP/HCP-covered species.

Santa Catalina Island Desert-thorn (Lycium brevipes var. hassei). This species is a perennial deciduous shrub in the Solanaceae family that blooms in June (August). This species occurs in coastal bluff scrub and coastal scrub below 984 feet elevation. The survey was conducted during the blooming period of this species and the species was not observed. However, focused special-status plant surveys, which require 100 percent coverage transects, were not conducted; therefore, this species could occur within the Biological Survey Area. There is appropriate coastal bluff scrub and coastal scrub habitat within the Biological Survey Area, and CNDDDB records indicate a historic population within 1 mile of the Biological Survey Area. Therefore, there is a high potential for this species to occur within the Biological Survey Area. This species is an NCCP/HCP-covered species.

Special-Status Animals. A current database search (CDFW 2022) resulted in a list of 15 federally and/or State-listed endangered or threatened, Species of Concern, or otherwise sensitive wildlife species that may potentially occur within the Biological Survey Area. After a literature review and the assessment of the various habitat types within the Biological Survey Area, it was determined that nine sensitive wildlife species are considered absent from the Biological Survey Area, two species have a low potential to occur, one species has a moderate potential to occur, two species have a high potential to occur, and one species is present within the Biological Survey Area. Factors used to determine potential for occurrence included the quality of habitat and the location of prior CNDDDB records of occurrence.

Nine wildlife species are considered absent from the Biological Survey Area due to lack of suitable habitat present within the project area. However, the analysis of the CNDDDB search and field survey resulted in one species with a moderate potential to occur within the project area. This species is described below.

Coast Horned Lizard (*Phrynosoma blainvillii*). The coast horned lizard is a California Species of Special Concern (SSC) that is found in many habitats, including oak woodlands, chaparral, CSS, grasslands, valleys, foothills, riparian wetlands, conifer forests, and semiarid mountains up to 8,000 feet above mean sea level (Stebbins 2003). It inhabits sandy washes or areas with loose, fine, sandy soils for burying; low brush for cover; and open areas for basking. It feeds primarily on harvester ants and other native ant species (Stebbins 2003).

The analysis of the CNDDDB search and field survey resulted in two species with a high potential to occur within the Biological Survey Area. These species are described below.

San Diego Desert Woodrat (*Neotoma lepida intermedia*). The San Diego desert woodrat is an SSC that inhabits moderate to dense canopies in a variety of sagebrush scrub, chaparral, and desert habitats, especially in rock outcrops, rocky cliffs, and slopes (Natureserve 2013). This species is often associated with large cactus patches within CSS communities, and it almost is invariably associated with prickly pear (*Opuntia* spp.). High-quality habitat occurs within the sage scrub habitats throughout the Biological Survey Area. In addition, this species has been recorded within the Biological Survey Area. Therefore, the San Diego desert woodrat has a high potential to occur within the Biological Survey Area. This species is not an NCCP/HCP-covered species.

Palos Verdes Blue Butterfly (PVB) (*Glaucopsyche lygdamus palosverdesensis*). The PVB is a federally listed endangered species and an NCCP/HCP-covered species. A few small populations of this butterfly can only be found on the Palos Verdes Peninsula. The PVB is dependent on its host and food plant species, locoweed (*Astragalus trichopodus* var. *lonchus*) and deerweed (*Acmispon glaber*) (The Butterfly Conservation Initiative 2006). Its flight season occurs from late January to mid-April. High-quality habitat for this species is present throughout the Biological Survey Area. In addition, several occurrences of this species have been recorded within 1 mile of the Biological Survey Area. Therefore, the PVB has a high potential to occur within the Biological Survey Area. This species is covered under the NCCP/HCP.

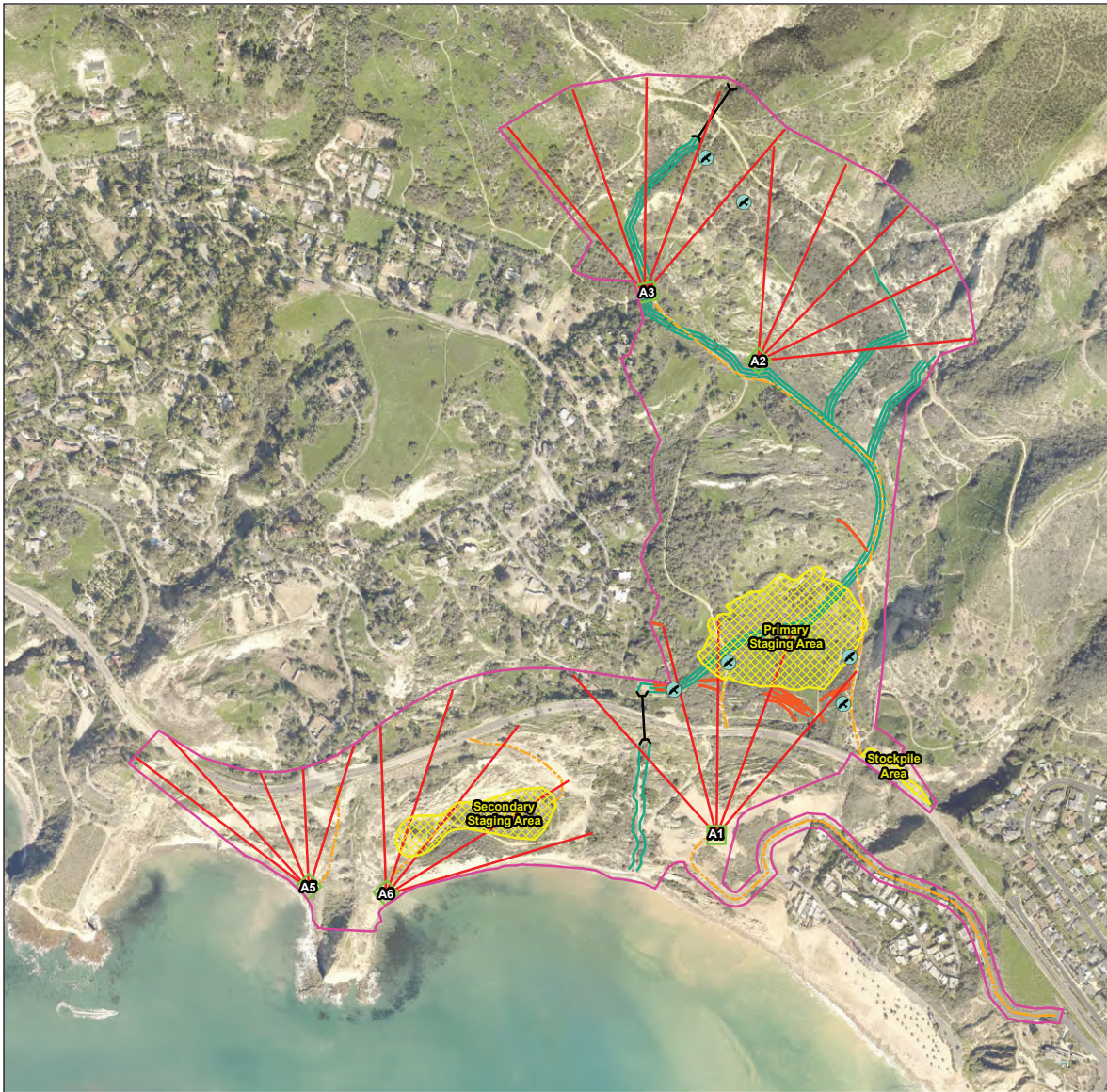
One species, the coastal California gnatcatcher, was present within and directly adjacent to the Biological Survey Area during the survey. In addition, this species has been recorded as nesting within and surrounding the Biological Survey Area.

Coastal California Gnatcatcher (*Poliophtila californica californica*). The coastal California gnatcatcher is a federally threatened species and a California SSC. It is a permanent resident of Diegan, Riversidian, and Venturan sage scrub sub-associations found from sea level to 2,500 feet in elevation. The species lives and breeds within California sagebrush-dominant habitats and also occurs in mixed scrub habitats with lesser percentages of this favored shrub (Atwood and Bontrager 2001). During the survey, several individuals were observed foraging throughout the higher-quality sage scrub habitats within the Biological Survey Area (Figure 4.3-3, Sensitive Species Occurrences Map). This species is an NCCP/HCP-covered species.

Critical Habitat. The majority of the Biological Survey Area is within designated critical habitat for the coastal California gnatcatcher, and the undeveloped portions of the Biological Survey Area with mapped native CSS vegetation types support physical and biological features suitable for coastal California gnatcatcher foraging and breeding. No other designated or proposed critical habitats occur within the Biological Survey Area. Critical habitat designations require federal agencies to ensure that actions they plan to undertake, fund, or authorize do not destroy or adversely modify the designated habitat. Only activities that involve a federal permit, license, or funding are affected by critical habitat designations and related policies, but it should be noted that these habitats are intended to support the recovery of federally listed species.

Jurisdictional Aquatic Resources. The Biological Survey Area is located within the Frontal Santa Monica Bay-San Pedro Bay Watershed (Hydrological Unit Code – 10; 1807010405, an area of approximately 74,377 acres; California Water Indicators Portal 2022), which covers portions of the Palos Verdes and Redondo Beach coastlines. The Biological Survey Area is located in Portuguese Canyon, located between Altamira Canyon to the west and Klondike Canyon to the east. The headwater of Portuguese Canyon is located along Crest Road, approximately 3,400 feet north of the Biological Survey Area. Surface water collects after rain events and flows southward down toward the northern portion of the Biological Survey Area, along Burma Road. Based on the topography in the area, Burma Road is an active slide area, a band of ground at a slightly higher elevation, and alters the direct linear flow of water downstream. The landslide has caused damage to historically installed drainage systems and natural drainage features within the Biological Survey Area, which has resulted in severed drainage connections, erosion, loss of topsoil, and other damage to habitats within the area. The project is designed to address these issues by stabilizing and directing surface runoff (as described below), which will in turn enhance habitat functions and values, providing for more steady fluvial processes and ecological succession of habitats.

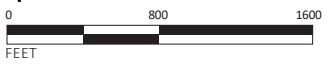
A small portion of the northwestern area of the Biological Survey Area is in a Federal Emergency Management Agency (FEMA) flood hazard Zone D (area of undetermined flood hazard), and a small portion of the southern boundary is designated as Zone VE (1 percent chance of flood hazard). No other areas are within FEMA flood hazard zones.



- Proposed Project Limit
- Proposed Hydrauger Work Locations
- Staging Area/Work Location
- Proposed Hydrauger Arrays
- Approximate Surface Fracture Locations
- Proposed Access Route
- Proposed Culvert
- Proposed Swale
- Sensitive Species Occurrences**
- California Gnatcatcher

All features are approximate

LSA



SOURCE: Chambers Group, November 2022

I:\PVE2202\g\Sensitive Species Occurrences Map.ai (1/26/2023)

FIGURE 4.3-3

Portuguese Bend Landslide Remediation Project
 Sensitive Species Occurrences Map

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Three National Wetlands Inventory (NWI) mapped bluelines and National Hydrography Dataset (NHD) streams occur within the Biological Survey Area. All three drainages are ephemeral; they only support surface flows during and immediately after rain events. No potential wetlands or riparian habitat areas were observed within the Biological Survey Area.

Drainage Feature 1. Drainage Feature 1 enters the northern portion of the Biological Survey Area just north of Burma Road, flows in a southward direction for approximately 1,530 feet through the upper portion of the project area, then flows approximately 1,660 feet outside of the project area along the western boundary, then back into the Biological Survey Area through an existing culvert located north of Palos Verdes Drive South for approximately 1,140 feet before terminating in the Pacific Ocean. The lower portion of the drainage exhibits friable soils and many fracture areas. Therefore, the banks are not well defined, and the drainage appears to follow fractures and go subsurface before it terminates along the rocky cliffs. This drainage is also identified as an ephemeral drainage in the NHD dataset. Vegetation within and on top of the banks of Drainage 1 primarily includes Exotic Woodland, CSS, Saltbush Scrub, Developed, and Disturbed vegetation.

Drainage Feature 1 has a series of existing 3-foot corrugated plastic pipes and corrugated metal pipes (CMPs) that were installed in 1995 as part of the Grading and Drainage Improvement Project. These pipes appear to divert surface water of the existing drainage approximately 470 feet south of Burma Road and continue for approximately 765 feet in a southwest then southwardly direction along the western boundary of the Biological Survey Area. At this point, the CMPs direct water away from the existing Drainage Feature 1 in a southeastward direction toward the eastern boundary of the Biological Survey Area, then southwest, where water is directed back toward Drainage Feature 1 and eventually enters a culvert under Palos Verdes Drive South. Drainage Feature 1 continues through an existing CMP and terminates on the cliffs above the beach of the Pacific Ocean. Based on the lack of definable banks in the lower portion of Drainage 1 (below Palos Verdes Drive South), this CMP appears to capture and direct the majority of the surface flows to the cliff edge, where it terminates in the Pacific Ocean.

The proposed swale feature will intercept flows from Drainage 1, near the northwestern portion of the study area, and convey water within an open swale feature toward the proposed Flow Reduction Area (and Primary Staging Area), then back to the existing Drainage Feature 1 near Palos Verdes Drive South.

Drainage Feature 2. Drainage Feature 2 enters the northern portion of the Biological Survey Area approximately 985 feet to the east of Drainage Feature 1, just north of Burma Road. This feature flows south to southwestwardly for 380 linear feet before going subsurface approximately 70 feet north of Burma Road (active slide area). Burma Road is higher in elevation than the terminus of the drainage feature banks and contributes water to the active slide area below the surface of the ground. The feature does not continue south of Burma Road, as no surface hydrology was evident during the survey effort. The NWI dataset layer also identifies this as the drainage terminus. Vegetation within and on top of the banks of Drainage 2 is primarily CSS (Undifferentiated and *Rhus*-Dominated) vegetation. No swale feature is proposed for this location, and no impacts are anticipated for Drainage Feature 2.

Drainage Feature 3. Drainage Feature 3 enters the northern portion of the Biological Survey Area approximately 885 feet to the east of Drainage Feature 2, at Burma Road. An existing CMP intercepts the drainage feature and directs flow southwardly for approximately 285 feet, where it reaches Peppertree Trail. The topography of this area at Peppertree Trail is relatively flat, and water connects to the series of 3-foot CMPs that are not closed (i.e., are cut and lay open to the air); this is the same system of CMPs that directs surface flow for Drainage Feature 1. The CMPs at this location direct the water southward along the trail into the Primary Staging Area (Flow Reduction Area) and follow the same existing CMPs described for Drainage Feature 1. Vegetation within and on top of the banks of Drainage 3 includes Exotic Woodland, CSS, Saltbush Scrub, and Developed areas. Impacts to Drainage Feature 3 include installation of the proposed swale feature immediately north of Peppertree Trail. No water features other than the CMPs were observed below Peppertree Trail.

Additional Drainage. A fourth drainage feature to the east of the Biological Survey Area that flows within Klondike Canyon does not enter the Biological Survey Area. A proposed stockpile area at the southwestern portion of the Biological Survey Area is located within a developed area (an existing parking area) and is on a bridged area high above the stream and NWI wetland area. The water flows below the developed area and is presumed to flow into a culvert (outside of the Biological Survey Area) through the private residential community below. No impacts to this drainage or associated habitat are anticipated.

4.3.4 Regulatory Setting

4.3.4.1 Federal Regulations

United States Fish and Wildlife Service. The USFWS, pursuant to FESA, protects endangered and threatened species. FESA defines an endangered species as a species in danger of extinction throughout all or a significant part of its range and a threatened species as one that is likely to become endangered in the foreseeable future. USFWS also identifies species proposed for listing as endangered or threatened. Other than for federal actions, there is no formal protection for candidate species under FESA. However, consultation with USFWS regarding species proposed for listing can prevent project delays that could occur if a species is listed prior to project completion.

United States Army Corps of Engineers. The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into waters of the United States, which are defined as wetlands and nonwetland waters that meet specific criteria. The USACE's regulatory jurisdiction, pursuant to Section 404 of the federal Clean Water Act (CWA), is founded on a connection, or nexus, between a water body and interstate commerce that may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or indirect (through a connection identified in the USACE regulations).

Section 401 of the Clean Water Act. The California Regional Water Quality Control Board (RWQCB) administers Section 401 of the CWA, which is implemented through the issuance of a Section 401 Certification for Section 404 permits issued by USACE. Areas subject to RWQCB jurisdiction typically coincide with those of USACE (i.e., waters of the United States, including any wetlands). The RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the

California Porter-Cologne Water Quality Control Act, but this mechanism is typically not invoked in cases where USACE asserts permitting authority pursuant to the CWA.

Federal Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) governs take, possession, import, export, transport, selling, purchasing, or bartering of migratory birds and their eggs, parts, and nests, except as authorized under a valid permit. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take while ensuring that take is compatible with protection of the species. Most bird species are protected under the MBTA.

In addition, under the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy any bird or the nests or eggs of any bird species except as otherwise provided in the California Fish and Game Code and its regulations. This code also specifically protects raptors, including owls. The CDFW considers a disturbance that results in nest abandonment or loss of reproductive effort as take. Disturbances of active nesting territories should be avoided during the nesting season.

4.3.4.2 State Regulations

California Environmental Quality Act. CEQA is intended to ensure that the potential effects of proposed projects are identified and disclosed prior to project approval. If a project has the potential to result in one or more significant impacts, mitigation to lessen or avoid the identified impacts is required. Section 15382 of the *State CEQA Guidelines* defines a significant effect on the environment as "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

Section 15380 of the *State CEQA Guidelines* defines a rare or endangered species for the purposes of CEQA as a species or subspecies of animal or plant or a variety of plant "...already listed by a government agency (CDFW and/or USFWS) as being rare, threatened, or endangered..." A plant or animal may also be treated as rare or endangered for the purposes of CEQA even if it has not been listed by a government agency, if it can be shown that the species meets the criteria for such listing.

California Endangered Species Act. The CDFW, through provisions of the California Administrative Code and policies formulated by the California Fish and Game Commission (Commission), regulates plant and animal species in danger of, or threatened with, extinction based on the list of endangered, threatened, and candidate species developed by the Commission. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant part of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become endangered in the foreseeable future without special protection and management. Candidate species are species the Commission has formally noticed as being under review for addition to the list of endangered or threatened species or as a species proposed for listing.

Streambed Alteration Regulations. The CDFW, through provisions of the California Administrative Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected by a proposed project. Streams and rivers are defined by the presence of a channel bed and banks and at least a periodic flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW. The CDFW also includes nonwetland riparian communities associated with rivers and streams as part of jurisdictional waters of the State. These areas may extend beyond jurisdictional waters of the United States.

California Natural Diversity Database. The CDFW administers the CNDDDB, which comprises lists of special-status plants, animals, and natural communities, including species listed under CESA and FESA, California SSC, and USFWS Birds of Conservation Concern. Additional species, natural communities, and habitat types are designated as being of special interest because of their rarity (e.g., very localized distribution, few scattered occurrences) and/or threats to their existence, although there is no specific regulatory protection afforded to those species by listing in the CNDDDB.

California Native Plant Society. The CNPS is a nonprofit organization that promotes the preservation of native California plants. The CNPS created and maintains an Online Inventory of Rare and Endangered Plants of California, which identifies four specific designations, or Lists, of special-interest plant species.

4.3.4.3 Regional Regulations

Rancho Palos Verdes Natural Communities Conservation Plan/Habitat Conservation Plan. The Rancho Palos Verdes City Council adopted the NCCP/HCP in 2019. It is a regional planning document developed to meet the requirements of FESA and the NCCP Act that also streamlines vital City public projects while conserving protected species and their habitats in perpetuity. The NCCP/HCP is a comprehensive habitat planning tool intended to provide effective, long-term conservation management of wildlife and natural communities, while continuing to allow compatible development in accordance with the City's General Plan. The City has been issued an NCCP/HCP permit by the USFWS pursuant to the NCCP/HCP (permit issuance by the CDFW is anticipated to occur by spring 2023). Pursuant to the NCCP/HCP, the Preserve serves as natural mitigation for the NCCP/HCP and has specific regulations pertaining to natural resource protection. Any potential impacts to plant or wildlife habitats or species resulting from the project will be mitigated using approved methods defined in the NCCP/HCP in accordance with USFWS and CDFW.

The Survey Area is located within the designated boundaries of the NCCP/HCP, and each proposed project component is a covered activity under the NCCP/HCP. Specifically, the project components fall under the following covered activities: Landslide Abatement Measures (Section 5.2.3 of the NCCP/HCP), Dewatering Wells (Section 5.2.2 of the NCCP/HCP), and Miscellaneous Drainage Repair in Landslide Areas (Section 5.2.4 of the NCCP/HCP). The NCCP/HCP identifies various land designations, including Lands Dedicated as Previous Mitigation, City-Owned Lands Dedicated to the Preserve, PVPLC-Owned Lands Dedicated to the Preserve, Other Private and Public Targeted Lands for Dedication to the Preserve, Reserve Areas, and Neutral Lands. Land designations applicable to the Survey Area include City-Owned Lands Dedicated to the Preserve and Neutral Lands. The City guarantees implementation of the NCCP/HCP through interim and permanent regulatory measures,

including codes, ordinances, and policies contained in the City's General Plan and Municipal Code (Section 6.3 of the NCCP/HCP). The actions described ensure consistent implementation of this NCCP/HCP through City policy, private and public project review and approval, and guidelines for operation and management of public lands. In addition, the City provides interim protection to habitat lands addressed in the Take Authorizations. Based on the Coastal Sage Scrub Conservation and Management Ordinance, the City will be amending its existing Coastal Sage Scrub Conservation and Management Ordinance (Municipal Code Chapter 17.41 et seq.) to ensure that the provisions of this NCCP/HCP are incorporated into said ordinance. More specifically, the ordinance will allow CSS loss associated with the projects and activities covered by the NCCP/HCP and will incorporate the mitigation requirements discussed in Sections 5.3.3 and 5.3.4 of the NCCP/HCP.

In accordance with Landslide Abatement Measures (Section 5.2.3 of the NCCP/HCP), areas of temporary CSS disturbance will be revegetated with CSS habitat within 60 days after completion of abatement activities. A plan for revegetation of CSS habitat in areas of temporary CSS disturbance will be completed during the planning stage of landslide abatement measures. The plan will take into account all the restoration guidelines incorporated in this NCCP/HCP (see Section 5.5 and Section 6.0 of the NCCP/HCP for details about the restoration plan). It is estimated that such landslide abatement measures will result in the combined loss of a maximum of 5.0 acres of CSS habitat and 15.0 acres of nonnative grassland. It is estimated that two-thirds of the impacts will occur within the Preserve. Other Covered Projects within the Preserve include Dewatering Wells and Miscellaneous Drainage Repair in Landslide Areas. It is estimated that a maximum of 2.5 acres of CSS and 2.5 acres of nonnative grassland will be impacted for the installation of dewatering wells (Section 5.2.2 of the NCCP/HCP), and a maximum of 10 acres of CSS and 15 acres of nonnative grassland will be impacted for the repair of existing drainage systems within the Preserve.

The NCCP/HCP provides regional conservation of native wildlife diversity through preservation of sufficient habitat for comprehensive management of the following 10 Covered Species for which Incidental Take Authorization is provided through permits issued for the NCCP/HCP: aphanisma (*Aphanisma blitoides*), south coast saltscale (*Atriplex pacifica*), Catalina crossosoma (*Crossosoma californicum*), island green dudleya (*Dudleya virens ssp. insularis*), Santa Catalina Island desert-thorn (*Lycium brevipes var. hassei*), woolly seablite (*Suaeda taxifolia*), Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*), El Segundo blue butterfly (*Euphilotes battoides allyni*), coastal California gnatcatcher (*Polioptila californica californica*), and cactus wren (*Campylorhynchus brunneicapillus*). The NCCP/HCP outlines habitat avoidance and minimization measures as well as standard operational procedures and mitigation measures for work occurring within participating landowners and preserves (Section 5.5 of NCCP/HCP).

4.3.4.4 Local Regulations

City of Rancho Palos Verdes Conservation and Open Space Element. The City Council adopted the most recent Conservation and Open Space Element of the General Plan in September 2018, which contains goals and policies to preserve important ecological and biological resources for future generations and to preserve the quality of life in the community to which these resources contribute. The Project Site is primarily zoned as Open Space - Hazard (OH), with a portion zoned as Residential Single Family - lot less than 20,000 square feet (RS-2) to the southeast (City of Rancho Palos Verdes 2018). Portions of the Project Site are also located in the City's OC-1 Natural Design

Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast. There are several goals/objectives, policies, and programs in the Conservation and Open Space Element that are applicable to the proposed project, as listed below:

- Conserve, protect, and enhance the City's natural resources; beauty; and open space for the benefit and enjoyment of its residents [...] future development shall recognize the sensitivity of the natural environment and be accomplished in such a manner as to maximize the protection of it (Goals 1.1)
- Require developments within or adjacent to wildlife habitats to describe the nature of the impact on the wildlife habitat and provide mitigation measures to fully offset the impact. (Policy 2.8)
- Require developments within the Resource Management Districts containing natural vegetation to revegetate with appropriate native plants whenever possible when clearing of vegetation is required. (Policy 2.9)
- Maintain the existing natural vegetation of the City in its natural state in all existing and proposed developments, to the extent commensurate with good fire protection policies, and encourage the re-establishment of appropriate native plants, especially fire-retardant natives such as saltbrush, near fuel modification setback areas. (Policy 2.14)
- Implement the Rancho Palos Verdes NCCP/HCP (Policy 2.16)
- Continue to implement the City's Natural Overlay Control District and its performance criteria. (General Policy 2.17)
- Continue to implement the natural environment policies of the Coastal Specific Plan (General Policy 2.18)
- Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreation amenities such as trails (Habitat Protection, Policy 2.22)
- Encourage the restoration of vegetation throughout the City to indigenous native plant species. Encourage use of locally native plant species in City landscaping (Habitat Protection, Policy 2.23)
- Ensure the maximum preservation of natural scenic character and topography of the City consistent with reasonable economic uses (Environmental Protection, Policy 2.27)
- Provide access to all public recreational land (Open Space and Recreational Resources, Policy 2.35)

City of Rancho Palos Verdes Municipal Code. As mentioned above, portions of the Project Site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast. Due to this classification, the project is subject to the regulations outlined in Section 17.40.040 – Natural Overlay Control District

(OC-1), as well as Section 17.40.060 – Urban Appearance Overlay Control District (OC-3). Due to the presence of CSS within the Preserve area, the project is also subject to the regulations outlined in Section 17.41 – Coastal Sage Scrub Conservation and Management. As the project area is subject to the guidelines of the NCCP/HCP, the zoning code regulations outlined in Section 17.70.025 – Natural Communities Conservation Plan/Habitat Conservation Plan Compliance will be adhered to as part of project implementation as well.

City of Rancho Palos Verdes Coastal Specific Plan. The City Council adopted the Local Coastal Specific Plan in December 1978 and conducted an update in 2015. The Local Coastal Specific Plan was established to set up goals and policies to manage natural resources along the City’s 7.5-mile coastline area and maintain its value as a locally defined public resource. Further, the Local Coastal Specific Plan was developed to represent the City’s Local Land Use Plan Component of the Local Coastal Program, as mandated by the 1976 Coastal Act. Several policies outlined in the Local Coastal Specific Plan are applicable to the proposed project, as listed below:

- Require developments within or adjacent to wildlife habitats to describe the nature of the impact upon the wildlife habitat and provide mitigation measures to fully offset the impact (N-46 – Policy 8)
- Encourage developments within Coastal Resource Management districts containing natural vegetation to revegetate with native material wherever clearing of vegetation is required (N-46 – Policy 9)
- Provide mitigating measures where possible to control surface runoff that might be degrading to the natural environment. (N-46 – Policy 15)
- Support and encourage site and structural designs which respond to climatic site conditions (N-46 – Policy 18)
- Encourage restoration efforts dealing with enhancing the marine environmental from a biological standpoint (N-47 – Policy 20)
- Ensure that flood control improvements are carried out in a manner that is consistent with applicable General Plan and Coastal Specific Plan policies regarding preservation of natural habitat, visual character, and flood control (S1-11 – Policy 6)
- Ensure that natural drainage courses are preserved and, where flood control devices are necessary, that they are sensitive to the natural environmental and consistent with applicable corridor policies (S7-13 – Policy 10)

4.3.5 Thresholds of Significance

The thresholds for biological resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the *City’s Local Guidelines for Implementing the California Environmental Quality Act* (City of Rancho Palos Verdes 2019). The proposed project may be deemed to have a significant impact with respect to biological resources if it would:

- Threshold 4.3.1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Threshold 4.3.2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Threshold 4.3.3:** Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Threshold 4.3.4:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Threshold 4.3.5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Threshold 4.3.6:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3.6 Project Impacts

- Threshold 4.3.1:** Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. According to the Biological Technical Report (Chambers Group, Inc. 2022), no special-status plants have been determined to be present on the Project Site. While special-status plant species are not expected within the project impact areas, Mitigation Measure BIO-1 would require an appropriately timed, focused plant survey, which should be conducted within the final project work areas for the following species: aphanisma, Brand's star phacelia, Coulter's saltbush, mesa horkelia, Parish's brittle scale, Santa Catalina Island desert-thorn, and south coast salt scale. Surveys should be conducted in May/June to capture the appropriate blooming periods for these species. If an existing population will be impacted by covered projects/activities, the project applicant will engage the PVPLC (Preserve Habitat Manager) and work with the Wildlife Agencies (USFWS and CDFW) to prepare and implement a habitat restoration plan in accordance with the habitat restoration plan guidelines in Section 7.5 of the NCCP/HCP, to be approved by the City and Wildlife Agencies, that will ensure no net loss of covered species.

Implementation of Mitigation Measure BIO-1 would identify the presence or absence of special-status plant species within the Project Site and, where impacts are not avoidable, provide a mechanism for project compliance with the NCCP/HCP. Should special-status plant species be identified as present on the Project Site, specific procedures would be implemented to avoid or compensate for impacts to such species, where applicable. Therefore, with implementation of Mitigation Measure BIO-1, impacts to special-status plant species would be less than significant.

According to the Biological Technical Report, there was an identified presence of the California gnatcatcher at the Project Site; therefore, this species has the potential to be affected during construction activities through disturbances to occupied habitat along with increased noise, vibration, lighting, and dust. Indirect disturbance has the potential to affect foraging patterns and disorient special-status species occurring in adjacent habitat areas. Mitigation Measure BIO-2 states that if construction activities must occur in California gnatcatcher habitat during breeding season (February 15–August 31), a pre-construction survey will be conducted to determine nesting activity. Survey results will be submitted to the Wildlife Agencies for review. If nesting activity is detected, all construction activity must occur outside a 300-foot buffer surrounding each active nest. Reductions in the nest buffer may be possible depending on site-specific factors, in coordination with the Wildlife Agencies. All active nests will be monitored by a qualified biologist. Further, Mitigation Measure BIO-3 requires Worker Environmental Awareness Program (WEAP) training to be conducted by a qualified biologist prior to initial groundbreaking. This training would help to avoid or minimize project-related effects to sensitive species by ensuring that construction personnel are trained on the following: (1) the potential presence of covered species and their habitats, (2) the requirements and boundaries of the project, (3) the importance of complying with avoidance and minimization measures, (4) environmentally responsible construction practices, (5) identification of sensitive resource areas in the field, and (6) problem reporting and resolution methods. Training construction crews on special-status species identification and applicable standards and regulations would help avoid impacts to special-status species that are known to occur in habitats adjacent to the Project Site by identifying those areas where special-status species have potential to be present and specifying procedures that would be implemented to avoid impacts to such species.

Mitigation Measure BIO-4 is also proposed and outlines best practices/construction housekeeping measures to minimize impacts on habitat subject to construction disturbances and other types of ongoing project-related disturbance activities. Construction site housekeeping measures included in Mitigation Measure BIO-4 would effectively minimize temporary construction effects on sensitive biological resources by limiting construction equipment and personnel from entering areas where special-status species may be impacted, limiting the potential for fuel or chemical spills that could adversely impact water quality and adjacent aquatic habitats, minimizing the disturbance area needed for construction access and related effects (e.g., dust, noise, and vibration), reducing the likelihood of attracting or introducing predators of special-status species, and preventing the primary or secondary poisoning of wildlife in the project vicinity. Therefore, with implementation of Mitigation Measures BIO-2 through BIO-4, impacts to special-status animal species during construction would be less than significant.

Construction activities also have the potential to result in temporary indirect effects to water quality during construction, which could lead to habitat degradation and associated impacts to special-

status species. Such effects include a potential increase in erosion and sediment transport into adjacent or downstream aquatic areas. Chemical spills or leaks of fuel, transmission fluid, lubricating oil, or motor oil from construction equipment could also contaminate waters and degrade their quality. These potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of best management practices (BMPs), project design features, and a Water Quality Management Plan (WQMP), as discussed in more detail in Section 4.8, Hydrology and Water Quality. Additionally, implementation of Mitigation Measure BIO-5 is required to reduce indirect impacts to nearby jurisdictional waters during project construction. Mitigation Measure BIO-5 requires grading and construction resulting in ground disturbance to occur within the typical dry season, as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. The project contractor would also be required to install adequate erosion and sedimentation barriers prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. The erosion and sedimentation barriers would have the added benefit of minimizing the potential for special-status amphibians and other wildlife to enter work areas during construction. Therefore, implementation of Mitigation Measure BIO-5 would reduce the potential for habitat degradation through temporary indirect effects to water quality during construction to less than significant levels.

Mitigation Measure BIO-6 requires that the construction footprint be clearly defined with flagging and/or fencing, which would be removed upon completion. Mitigation Measure BIO-6 also requires that when accessing the Preserve, authorized vehicle operators take measures to avoid and minimize, to the maximum extent possible, environmental damage, including damage to habitat and covered species. Existing Preserve roads or trails that accommodate authorized vehicles in the Preserve should be used wherever practical while minimizing authorized vehicle trips overall within the Preserve. Any unavoidable access routes outside existing trails that can accommodate authorized vehicles or construction areas should be clearly marked. Such access routes are planned to avoid/minimize impacts to covered species, habitat fragmentation, and edge effects. The width of construction corridors and easements will be minimized. Implementation of Mitigation Measure BIO-6 would result in an improvement over existing conditions. Therefore, with implementation of Mitigation Measure BIO-6, impacts to special-status animal species during construction and operation would be less than significant.

It should also be noted that the project is located in an area of Rancho Palos Verdes that contains Natural Overlay Control District (OC-1) and Urban Appearance Overlay Control District (OC-3) land. Due to this, along with the fact that the entirety of the project is subject to the regulations outlined in the City's NCCP/HCP, Regulatory Compliance Measures BIO-1 and BIO-2 must be adhered to as part of constructing the proposed project. The criteria outlined in Regulatory Compliance Measure BIO-1 ensures that all relevant avoidance and minimization measures included per Sections 5.5 and 5.6 of the NCCP/HCP must be followed during the construction and implementation of the proposed project. Regulatory Compliance Measure BIO-2 requires the proposed project to adhere to certain criteria outlined in the Municipal Code section for each overlay control district. These criteria serve as the baseline for preserving natural habitats for plant and wildlife species within these districts to the maximum extent possible. Due to the inclusion of CSS within the project area, the project must also adhere to Regulatory Compliance Measure BIO-3, which establishes a regulatory process for

approval of weed abatement and other activities undertaken on properties that are greater than 2 acres in size and contain CSS habitat to ensure that such activity does not jeopardize the continued viability of any endangered or threatened species due to the removal of, or impact to, occupied habitat.

Summary. The Biological Survey Area is within the Frontal Santa Monica Bay-San Pedro Bay Watershed, within an area of the Preserve that contains potential habitat for several regional special-status species. Due to this, the project could affect special-status plant and wildlife species through disturbances to occupied habitat, the attraction of predators, and increased levels of noise, vibration, lighting, and dust during construction activities. There is also a potential for temporary indirect effects to water quality during construction, which could lead to habitat degradation. However, implementation of Regulatory Compliance Measures BIO-1 through BIO-3 and Mitigation Measures BIO-1 through BIO-6 would effectively mitigate potential impacts on special-status wildlife plant and animal species to less than significant levels. With implementation of Regulatory Compliance Measures BIO-1 through BIO-3 and Mitigation Measures BIO-1 through BIO-6, potential impacts to candidate, sensitive, or special-status species would be less than significant.

Threshold 4.3.2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. A total of three ephemeral drainages vegetated with upland plant species (e.g., nonwetland, nonriparian) were delineated within the Biological Survey Area. In addition, upland-vegetated swales, existing CMPs, and culverts were also delineated. No vernal pools, wetlands, or riparian habitats were identified within the Biological Survey Area, and the project would not impact any of these resources.

The native CSS vegetation communities within the Project Site are covered under the NCCP/HCP and are therefore considered to be sensitive natural communities. Approximately 4.50 acres of Saltbush Scrub and 1.84 acres of Undifferentiated CSS would be permanently impacted by the project. Project-related permanent impacts to CSS are covered under the NCCP/HCP. The City mitigated for covered project impacts to CSS by establishment of the NCCP/HCP Preserve. The total CSS acreages that will be permanently impacted under each covered activity are within the City's remaining take allowances defined by the NCCP/HCP (refer to Section 4.3.4.3, above).

Approximately 1.45 acres of Undifferentiated CSS and 0.43 acre of Saltbush Scrub would be temporarily impacted by the project. As part of Regulatory Compliance Measure BIO-1, a project-specific restoration program will be prepared for temporary impacts to CSS according to the guidelines provided in Section 5.5 of the NCCP/HCP.

As discussed under Threshold 4.3.1, Mitigation Measures BIO-3, BIO-5, and BIO-6 are intended to mitigate impacts within the Preserve during project construction and operation and ensure that applicable NCCP/HCP provisions are implemented. Mitigation Measure BIO-3 requires Worker Environmental Awareness Program (WEAP) training to be conducted to educate all construction personnel on the relevant federal, State, and local laws related to regional special-status species

known to occur in adjacent habitat types, particularly habitat associated with the project area. Mitigation Measure BIO-3 includes measures to minimize impacts on habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities. Mitigation Measure BIO-5 requires grading and construction resulting in ground disturbance to occur within the typical dry season, as feasible, to avoid erosion and sedimentation impacts to nearby native habitats, creeks, and water quality. It also requires the installation of adequate erosion and sedimentation barriers to mitigate the potential for indirect effects to water to result in habitat degradation. Mitigation Measure BIO-6 requires the fencing and signage of environmentally sensitive areas, which would effectively avoid or minimize edge effects within the project area, and also requires that when accessing the Preserve, authorized vehicle operators take measures to avoid and minimize, to the maximum extent possible, environmental damage, including damage to native CSS habitats and covered species. Therefore, with implementation of Mitigation Measures BIO-3, BIO-5, and BIO-6, impacts to sensitive native habitats would be less than significant.

Threshold 4.3.3: Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant with Mitigation Incorporated. The Biological Technical Report has concluded that there are no State or federal wetlands within the Biological Survey Area. The proposed swale feature associated with the proposed project includes one main feature that begins at the proposed culvert at the headwaters of Drainage Feature 1 and flows approximately 1,000 feet through the existing drainage banks toward the proposed Hydrauger A3, where it diverts from the natural feature to the southeast, parallel to a trail for approximately 800 feet to Hydrauger A2. From Hydrauger A2, the swale flows southeast approximately 480 feet to the first swale tributary that begins at Burma Road and flows southward for approximately 680 feet until it connects to the main swale feature. From this connection, the swale feature flows southeast for approximately 310 feet until it connects to a second swale tributary. This second tributary begins at Drainage Feature 3 at Burma Road and flows southward for approximately 685 feet until it connects to the main swale feature. From here, the swale flows south and southwest for approximately 775 feet until it feeds into the proposed flow reduction area, continues for 900 feet through the basin, and then continues southwestward for approximately 410 feet, where it returns to Drainage Feature 1 and enters the proposed culvert (approximately 185 feet) at Palos Verdes Drive South. It then continues south for approximately 1,010 feet until it terminates near the Pacific Ocean.

Based on the current design, the proposed swale feature is approximately 20 feet wide, with 10 feet of temporary impacts on either side of the feature, for a total of 40 feet. Temporary work areas outside of the geocell limits of the proposed swale feature (but within the construction disturbance limits) will be covered with biodegradable erosion control matting and hydroseeded with native vegetation after grading activities. Overall, the proposed project features that will be implemented at the Project Site will assist with stabilization of slopes and drainages, along with conversion of pipe culverts to open swales. This will ultimately benefit the native habitats in the area, which are being disrupted by the landslide and associated alteration of drainages, erosion, and more.

Although construction activities have the potential to result in temporary indirect effects to water quality, including a potential increase in erosion and sediment transport into adjacent or downstream aquatic areas and the contamination of waters from construction equipment, these potential indirect effects to hydrology and water quality would be avoided or substantially minimized through the implementation of BMPs, project design features, and preparation of a WQMP, as discussed in Section 4.8, Hydrology and Water Quality. Additionally, as discussed in Threshold 4.3.1, Mitigation Measure BIO-5 requires grading and construction resulting in ground disturbance to occur within the typical dry season, as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. The project contractor would also be required to install adequate erosion and sedimentation barriers prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. Therefore, with implementation of Mitigation Measure BIO-5, impacts on State or federally protected wetlands would be less than significant.

Threshold 4.3.4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant with Mitigation Incorporated. According to the Biological Technical Report (Chambers Group, Inc. 2022), there are no designated wildlife corridors or wildlife nurseries on the Project Site where landslide remediation and associated drainage improvements are proposed. Given the isolated and disturbed nature of the Project Site, it is unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations. Migratory bird species may utilize the Project Site for foraging; however, the usage is likely transient and limited to species that forage over open grassland areas. Additionally, the Project Site does not possess any characteristics that would indicate a locally significant stopover point for migratory species, including raptors or waterfowl. No known wildlife movement corridors occur within the Project Site. Further, the project would not place any permanent barriers to wildlife movement within any corridors, nor would it permanently disrupt or impede the movement of any wildlife species within the project area.

The wildlife species that occur in the project vicinity and utilize the project area as a movement corridor are adapted to the urban-wildland interface, and the project would not introduce new effects to the area. The noise, vibration, light, dust, or human disturbance within the construction areas would only temporarily deter wildlife from using areas in the immediate vicinity of construction activities. These indirect effects could temporarily alter migration behaviors, territories, or foraging habitats in select areas. However, because these are temporary effects, it is likely that wildlife already living and moving in close proximity to urban development would alter their normal functions for the duration of the project construction and then reestablish these functions once all temporary construction effects have been removed.

Nevertheless, as previously described, the Project Site contains suitable nesting habitat for ground-nesting birds and for other birds that are protected under the California Fish and Game Code. The proposed project has the potential to impact active native bird nests if construction or demolition activities occur during the nesting season and the flight season of the PVB. Therefore, vegetation

clearing activities should be conducted outside the bird breeding season (defined in the NCCP/HCP as February 15 through August 31) and the flight season of the PVB (late January through early May) to minimize the overall impact to listed species, nesting habitat, host plants, and/or nectar sources. Mitigation Measure BIO-2, mentioned earlier, requires a qualified biologist to conduct preconstruction surveys for the California gnatcatcher if construction occurs within its breeding season. Mitigation Measure BIO-7 will require pre-construction surveys for the PVB host plant in all suitable habitat within the proposed project impact areas. With implementation of Mitigation Measure BIO-7, potential impacts to nesting birds and PVB would be less than significant. Therefore, impacts to the movement of any native resident or migratory fish or wildlife species and wildlife corridors would be less than significant with the implementation of mitigation.

Threshold 4.3.5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact. As mentioned previously, the project area contains CSS habitat and is therefore subject to the policies, regulations, and standards outlined in Section 17.41, Coastal Sage Scrub Conservation and Management Ordinance, of the City's Municipal Code. These policies establish a regulatory process for approval of weed abatement and other activities undertaken on properties that are greater than 2 acres in size and contain CSS habitat to ensure that such activity does not jeopardize the continued viability of any endangered or threatened species due to the removal of, or impact to, occupied habitat. The City amended its existing Coastal Sage Scrub Conservation and Management Ordinance to ensure that the provisions of this NCCP/HCP are incorporated into said ordinance. More specifically, the ordinance allows CSS loss associated with the projects and activities covered by this NCCP/HCP and incorporates the mitigation requirements discussed in Sections 5.3.3 and 5.3.4 of the NCCP/HCP. Because all project activities are covered under the NCCP/HCP and the applicable requirements are incorporated into the project, the project would not conflict with any local policies or ordinances protecting biological resources and no mitigation is required.

Threshold 4.3.6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less Than Significant Impact. As mentioned above, the Biological Survey Area includes approximately 104 acres of land within the City-owned Preserve, which contain sub-areas of the approximately 1,500-acre NCCP/HCP. It should be noted that the proposed project is consistent with the existing General Plan land use designations currently designated on the Project Site, and no General Plan Amendment would be required for project implementation.

As noted, the Biological Survey Area is located within the designated boundaries of the NCCP/HCP. The NCCP/HCP identifies various land designations, including Lands Dedicated as Previous Mitigation, City-Owned Lands Dedicated to the Preserve, PVPLC-Owned Lands Dedicated to the Preserve, Other Private and Public Targeted Lands for Dedication to the Preserve, Reserve Areas, and Neutral Lands. Land designations applicable to the Survey Area include City-Owned Lands Dedicated to the Preserve and Neutral Lands. The City guarantees implementation of the NCCP/HCP through interim and permanent regulatory measures, including codes, ordinances, and policies

contained in the City's General Plan and Municipal Code (Section 6.3 of the NCCP/HCP). The actions described ensure consistent implementation of this NCCP/HCP through City policy, private and public project review and approval, and guidelines for operations and management of public lands. In addition, the City provides interim protection to habitat lands addressed in the Take Authorizations. Based on the Coastal Sage Scrub Conservation and Management Ordinance, the City is in the process of amending its existing Coastal Sage Scrub Conservation and Management Ordinance (Municipal Code Chapter 17.41 et seq.) to ensure that the provisions of this NCCP/HCP are incorporated into said ordinance. More specifically, the ordinance will allow CSS loss associated with the projects and activities covered by the NCCP/HCP and incorporates the mitigation requirements discussed in Sections 5.3.3 and 5.3.4 of the NCCP/HCP.

In accordance with the Landslide Abatement Measures (Section 5.2.3 of the NCCP/HCP), areas of temporary CSS disturbance will be revegetated with CSS habitat within 60 days after completion of abatement activities. A plan for revegetation of CSS habitat in areas of temporary CSS disturbance will be completed as part of the planning stage of landslide abatement measures (and in accordance with Regulatory Compliance Measure BIO-1). The plan will take into account all of the restoration guidelines incorporated in this NCCP/HCP (see Section 5.5 of the NCCP/HCP for details about the restoration plan).

The NCCP/HCP provides regional conservation of native wildlife diversity through preservation of sufficient habitat for comprehensive management for the following 10 Covered Species for which Incidental Take Authorization is provided through permits issued for the NCCP/HCP: aphanisma, south coast saltscale, Catalina crossosoma, island green dudleya, Santa Catalina Island desert-thorn, woolly seablite, Palos Verdes blue butterfly, El Segundo blue butterfly, coastal California gnatcatcher, and cactus wren. The NCCP/HCP outlines habitat avoidance and minimization measures as well as standard operational procedures and mitigation measures for work occurring within participating landowners and preserves (Section 5.5 of NCCP/HCP); these measures are incorporated into Regulatory Compliance Measure BIO-1. The project would not conflict with an adopted HCP, NCCP, or other approved local, regional, or State HCP. No mitigation is required.

4.3.7 Level of Significance Prior to Mitigation

Potential indirect adverse impacts to biological resources (including special-status species and nesting birds within the Preserve) could occur, and mitigation is required.

4.3.8 Regulatory Compliance Measures and Mitigation Measures

4.3.8.1 Regulatory Compliance Measures

The proposed project would comply with the following Regulatory Compliance Measures. The City considers this to be mandatory; therefore, it is not considered mitigation.

Regulatory Compliance Measure BIO-1

Compliance with the City of Rancho Palos Verdes' (City) Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Section 17.70.025 of the City's Municipal Code, Natural Communities Conservation Plan/Habitat Conservation Plan

Compliance, requires that the City make a determination of conformance to the NCCP/HCP for any project requiring discretionary approval that would impact coastal sage scrub (CSS) habitat or any habitat type within the NCCP/HCP Preserve. Conformance will be demonstrated if the impact is associated with a covered project or activity defined in the NCCP/HCP, and all relevant avoidance and minimization measures are included per Sections 5.5 and 5.6 of the NCCP/HCP. Any biologist used for the implementation of this NCCP/HCP, including implementing these measures, will be subject to the Wildlife Agencies' review and approval. The City will submit the biologist's name, address, telephone number, résumé, and three references (i.e., the names and contact information of people familiar with the relevant qualifications of the proposed biologist) at least 10 working days prior to initiating work. If the Wildlife Agencies do not respond within this 10-day period, the City will assume that the biologists are approved.

Regulatory Compliance Measure BIO-2

Compliance with the City's Overlay Control District Regulations. Due to the project's land classification within the OC-1 and OC-3 districts, the proposed project must comply with the "Performance Criteria" outlined in Section 17.40.040, Natural Overlay Control District (OC-1) and Regulations, and Section 17.40.060, Urban Appearance Overlay Control District (OC-3) and Regulations, of the Rancho Palos Verdes Municipal Code. The "performance criteria" from these sections include project-related regulations such as, but not limited to, not covering or altering the land surface configuration by moving earth on more than 10 percent of the total land area of the portion of the parcel within the district; not filling, draining, or altering the shape or quality of any water body, spring, or related natural spreading area of greater than 1 acre; not removing vegetation within a designated wildlife habitat area; and not creating site plans or building or other improvement designs that would result in other significant changes to the natural topography or that would prevent or hinder the use of naturalized minimum grading techniques to restore an area to its natural contours.

Regulatory Compliance Measure BIO-3

Compliance with the City's Coastal Sage Scrub

Conservation and Management Regulations. Since CSS habitat is located within the project area, the project is subject to the policies, regulations, and standards outlined in Section 17.41, Coastal Sage Scrub Conservation and Management, of the City's Municipal Code. These policies establish a regulatory process for approval of weed abatement and other activities undertaken on properties that are greater than 2 acres in size and contain CSS habitat to ensure that such activity does not jeopardize the continued viability of any endangered or threatened species due to the removal of, or impact to, occupied habitat.

4.3.8.2 Mitigation Measures

The proposed project is required to implement the following mitigation measures to reduce potential impacts to biological resources.

Mitigation Measure BIO-1

Focused Plant Survey. Prior to construction, a focused plant survey should be conducted within the final project work areas for the following species: aphanisma, Brand's star phacelia, Coulter's saltbush, mesa horkelia, Parish's brittlescale, Santa Catalina Island desert-thorn, and south coast saltscale. Surveys should be conducted in May/June to capture the appropriate blooming periods for these species. If an existing population will be impacted by covered projects/activities, the project applicant will engage the Palos Verdes Peninsula Land Conservancy (PVPLC) (Palos Verdes Nature Preserve [Preserve] Habitat Manager) and work with the Wildlife Agencies to prepare and implement a habitat restoration plan in accordance with the habitat restoration plan guidelines in Section 7.5 of the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), to be approved by the City of Rancho Palos Verdes (City) and Wildlife Agencies, that will ensure no net loss of listed species within the population. If listed special-status plant species are found, the compensatory mitigation plan must also be approved by the United States Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Wildlife (CDFW), as applicable.

Mitigation Measure BIO-2

Pre-construction Nesting Bird Surveys. If vegetation removal, construction, or grading activities are planned to occur within California gnatcatcher habitat during its breeding season (February 15–August 31), a pre-construction survey will be conducted to determine nesting activity. The City's Community Development Director, or designee, shall confirm that the Project Applicant has

retained a qualified biologist (USFWS and CDFW will be provided a 10-day period to approve the proposed biologist; if no response from USFWS and CDFW is received within 10 days, approval will be waived), who shall conduct a pre-construction nesting bird survey no more than 3 days prior to the start of such activities. Survey results will be submitted to the Wildlife Agencies for review and approval. If comments are not received in 10 days, approval will be waived. If nesting activity is detected, all construction activity must occur outside of a 300-foot buffer surrounding each nest. Reductions in the nest buffer may be possible depending on site-specific factors, in coordination with the Wildlife Agencies. The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.

Mitigation Measure BIO-3

Worker Environmental Awareness Program (WEAP) Training. Prior to commencing construction, the Director of the City's Community Development Department, or designee, shall confirm that a Worker Environmental Awareness Program training shall be conducted by the City-approved qualified biologist to include the following: (1) the potential presence of covered species and their habitats, (2) the requirements and boundaries of the project, (3) the importance of complying with avoidance and minimization measures, (4) environmentally responsible construction practices, (5) identification of sensitive resource areas in the field, and (6) problem reporting and resolution methods. Training construction crews on special-status species identification and applicable standards and regulations would help avoid impacts to special-status species that are known to occur in habitats adjacent to the Project Site by identifying those areas where special-status species have potential to be present and specifying procedures that would be implemented to avoid impacts to such species. This training is intended educate all construction personnel on the relevant federal, State, and local laws related to regional special-status species known to occur in adjacent habitat types, particularly habitat associated with the Preserve. The training session shall include training on identification of species that may be found on or adjacent to the Project Site, the status of those species, and any legal protection afforded to those species. Measures that are being implemented to protect those species shall also be explained. Personnel shall be advised to report any special-status species promptly to the construction manager.

Mitigation Measure BIO-4

Construction Site Housekeeping. Impacts to habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities shall be minimized by adhering to the following avoidance and minimization measures, in accordance with the City's NCCP/HCP, for the duration of construction activities:

- Construction staging areas will be located at least 15 meters (50 feet) away from the Preserve boundary and natural drainages. No-fueling zones will extend a minimum distance of 15 meters (50 feet) from all drainages and away from the Preserve boundary.
- Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction, or as otherwise specified by compliance measures and Wildlife Agency coordination related to the NCCP/HCP.
- Project-related vehicles shall observe a daytime speed limit of 10 miles per hour (mph) throughout the project site. Nighttime construction is not permitted unless the City Manager determines that nighttime work is necessary to address public health and safety concerns. Off-road traffic outside of designated project sites shall be prohibited.
- To prevent inadvertent entrapment of animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.
- For the duration of construction activities, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least daily from the construction site.
- Pets, such as dogs or cats, shall not be permitted on the Project Site during construction to prevent harassment, injury, or death of wildlife in the project vicinity.

- Use of rodenticides and herbicides on project sites shall be restricted to prevent primary or secondary poisoning of predators and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the United States Environmental Protection Agency, the California Department of Food and Agriculture, and other State and federal legislation.

Mitigation Measure BIO-5

Erosion Control and Amphibian Exclusionary Fencing. Grading and construction resulting in ground disturbance shall occur within the typical dry season (April 15–October 15), as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. Prior to commencing construction, the City’s Community Development Director, or designee, shall verify that project plans require the project contractor to install adequate erosion and sedimentation barriers (e.g., silt fencing, as described below) prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. This silt fencing shall also serve as a temporary barrier to further minimize the potential for special-status amphibians and other wildlife to enter work areas during construction. The barriers shall consist of 3-foot-tall silt fencing buried to a depth of at least 6 inches below the soil surface along the outer limits of all work areas (or as otherwise required by the stormwater pollution and prevention plan (Stormwater Pollution Prevention Plan [SWPPP] and best management practices [BMPs]). These barriers shall be inspected daily by construction personnel and maintained and repaired as necessary for the duration of construction to ensure they are functional and are not a hazard to wildlife on the outer side of the fence. A City-approved qualified biologist shall monitor all fence installation. All barriers shall be removed following completion of construction.

Mitigation Measure BIO-6

Defining Construction Staging Areas and Regulating Access to the Preserve. During construction, it is required that the construction footprint be clearly defined with flagging and/or fencing, which will be removed upon completion. Additionally, when accessing the Preserve, authorized vehicle operators shall take measures to avoid and minimize, to the maximum extent possible, environmental damage, including damage to habitat and covered species. Existing Preserve roads or trails that accommodate authorized vehicles in the Preserve should be used wherever practical while minimizing authorized vehicle trips overall within the Preserve. Any unavoidable access routes outside existing trails that can accommodate authorized vehicles or construction areas should be

clearly marked. Any new recreational trails, trails that can accommodate authorized vehicles, and utility corridors will be located in areas that avoid/minimize impacts to covered species, habitat fragmentation, and edge effects. The width of construction corridors and easements shall be reviewed and approved by the City prior to use, and said footprint shall be minimized to the maximum extent possible.

Mitigation Measure BIO-7

Coastal Sage Scrub (CSS) Restoration Program. In order to ensure the best effort to minimize any potential impacts to the CSS habitat present in the project area, the City shall retain a qualified biologist to develop a project-specific restoration program for CSS and Saltbush Scrub according to the guidelines provided in Section 7.5 of the NCCP/HCP. The restoration plan shall also address the native planting to occur within the swales and low-flow reduction area. Both project components will be lined with geofabric conducive to planting of native material. Prior to selecting appropriate planting material, the City will consult with the PVPLC regarding the native plant mix and source for obtaining native plants and seeds. Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction.

Mitigation Measure BIO-8

Pre-construction Palos Verdes Blue Butterfly Surveys. If vegetation removal, construction, or grading activities are planned to occur within the flight season of the Palos Verdes blue butterfly (PVB) (late January through early May), a pre-construction survey will be conducted to determine the presence of any PVB host plants in all suitable habitat within the proposed project impact areas. If host plants are identified, a 5-foot buffer around the host plants will be avoided if feasible. If avoidance of host plants is not feasible, focused PVB surveys will be conducted. If PVB is discovered during surveys, the PVPLC, in coordination with the Wildlife Agencies, will be provided the opportunity to relocate any and all larvae, pupae, or adults. Occupied PVB host plants will be avoided when possible. Occupied habitat will be defined as host plants, including a 5-foot buffer, within a 50-foot buffer around any PVB observation.

Mitigation Measure BIO-9

Retaining a Qualified Biologist. Prior to commencing construction, the City shall retain the services of a qualified biologist. The USFWS and CDFW will be provided a 10-day period to approve the proposed biologist. If no response from USFWS and CDFW is received within 10 days, approval will be waived. The Project Biologist shall monitor all project-related ground-disturbing

construction activities and assist the City with implementation of all biological resource mitigation measures.

4.3.9 Level of Significance after Mitigation

Potential impacts to biological resources from the proposed project would be mitigated to a less than significant level with implementation of **Mitigation Measures BIO-1 through BIO-9**. Therefore, the project would have no significant and unavoidable adverse impacts related to biological resources.

4.3.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for recreation. The cumulative impact area for biological resources related to the proposed project is the city of Rancho Palos Verdes. Several residential and a few commercial development projects (remodels) are approved and/or pending within the city. The residential projects include 36 new single-family residential units in various stages of construction (Trump National Golf Club [Tract No. 50667]), 23 new single-family residential lots (no projects in review) associated with Trump National Golf Club (Tract No. 50666), 16 new single-family residential units on vacant lots in various stages of construction (Monks plaintiffs lots) and 31 new single-family residential units on vacant lots in various stages of the development review process (non-Monks plaintiffs lots), for a total of 106 total single-family units. Given the minimal number of cumulative projects with units dispersed at various locations in the city, cumulative impacts would be negligible. Furthermore, each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing recreational resources and would be reviewed for consistency with the NNCP/HCP, General Plan goals and policies, and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.3.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to biological resources. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to biological resources. Mitigation measures have been added to alleviate any long-term impacts. With compliance with these mitigation measures and regulations, impacts related to biological resources would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to biological resources.

4.4 CULTURAL RESOURCES

This section evaluates the potential for the Portuguese Bend Landslide Remediation Project (proposed project) to impact cultural resources. Cultural resources are prehistoric and historic archaeological artifacts, features, and sites, and historic buildings, structures, objects, and districts over 50 years old. The information and analysis presented in this section are based on the City of Rancho Palos Verdes (City) General Plan Conservation and Open Space Element (2018) and results from a Cultural Resources Phase I and Paleontological Pedestrian Survey prepared by Chambers Group for the City of Rancho Palos Verdes (2023).

The term “site” is used in two contexts in this section:

- “Project site” should be interpreted to mean the approximately 206-acre site of the currently proposed Portuguese Bend Landslide Remediation Project.
- “Archaeological site” should be interpreted to mean the specific locations that encompass evidence of past human activity.

4.4.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Two of the comment letters included comments related to cultural resources.

- The comment by Ken Dyda received on January 3, 2021, asks how mitigating measures would be identified for the current proposed EIR effort to reduce and mitigate the loss of historical and archaeological resources that may be uncovered by the slide movement of the Portuguese Bend Landslide (PBL).
- The comment by the Native American Heritage Commission (NAHC) received on November 16, 2020, recommended consultation with California Native American tribes that are affiliated with the project site area as early as possible to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

4.4.2 Methodology

A cultural resources assessment was conducted on the project site on September 28, 2022. The study included a record search requested on July 14, 2020, at the South Central Coastal Information Center (SCCIC); a pedestrian survey conducted on August 14, 2020; and extensive archaeological background research to determine if cultural resources are located within the project area. The pedestrian survey consisted of systematic surface inspection with transects at 10-meter intervals to ensure that any evidence of surface-exposed cultural materials could be identified and an examination of the ground surface for the presence of prehistoric and historic artifacts. The purpose of the 2020 records search at the SCCIC was to determine the extent of previous cultural resources investigations within a 0.5-mile radius of the project site and whether any previously recorded archaeological sites or historic resources exist within or near the project site. Materials reviewed in

the background research included the California Register of Historical Resources (CRHR), National Register of Historic Places (NRHP), California State Historic Property Data Files, California State Historical Landmarks, California Points of Historical Interest, Office of Historic Preservation (OHP) Archaeological Determinations of Eligibility, historic aerial imagery accessed via Nationwide Environmental Title Research (NETR) Online, historical United States Geological Survey (USGS) topographic maps, the Built Environment Resource Directory (BERD), and California Department of Transportation (Caltrans) State and Local Bridge Surveys. The Los Angeles Historical Landmarks inventory and the Palos Verdes Historical Society, as well as local historical newspaper clippings via Newspapers.com, ProQuest Historical Newspapers.com, and the California Newspaper Collection, were also reviewed.

4.4.2.1 Results

The 2020 SCCIC records search indicated that 36 previous cultural resource investigations had been conducted within the 0.5-mile radius of the project site, with 11 of those investigations taking place within the project site boundaries. Additionally, 15 previously recorded cultural resources were identified within 0.5-mile radius of the project site. Of these previously recorded cultural resources, P-19-177478, a historic resource, was located near the Project area, near the proposed hydrauger location A4. Two cultural resources—P-19-002253, a prehistoric cultural resource, and P-19-002586, a prehistoric and historic cultural resource—are located within the project site.

Results of the SLF request were received on July 17, 2020, and they returned negative for the project area and its surrounding 0.5-mile radius study area. As a result of the AB 52 consultation letters that Chambers Group sent out on behalf of the City, the Gabrielino Tongva Indians of California Tribal Council responded on August 13, 2020, with a request to engage in formal consultation with the City.

4.4.3 Existing Environmental Setting

4.4.3.1 Project Site and Surrounding Uses

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California.

4.4.3.2 Project Site History

Based on the records search, 15 cultural resources have been identified within 0.5 mile of the project site. Two of the previously documented cultural resources, a prehistoric deposit of marine shell and lithic debitage and a prehistoric marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris (P-19-002253/CA-LAN-002253 and P-19-002586/CA-LAN-002586/H), are located on the project site. One cultural resource, P-19-177478, which is a historic building, was identified by D. Cameron and the owners, Mr. and Mrs. Bara, in 1985. It is adjacent to but not within the project site.

P-19-177478, which is also known as the Harry E. Benedict Estate, is a historic building (built circa 1929) that was determined by the California State Historic Preservation Officer (SHPO) in 1986 to be of local significance but was not determined to meet the criteria for significance and inclusion on the CRHR or NRHP. This property is located just outside the project area.

P-19-002253, which was described when first recorded in 1992 by David Van Horn from Archaeological Associates as a deposit of marine shell and lithic debitage, consists of shell fragments, Monterey chert flakes, cores, and scrapers. Subsurface testing did not result in significant findings, and site record notes reveal that half of the site was destroyed by construction and agricultural activity on the site. No evidence of P-19-002253 was observed during recent surveys of the project area.

P-19-002586, which was described when first recorded in 1997 by Richard Cerreto from Chambers Group as a deposit of marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris, is indicated to be in fair condition, although it is considered disturbed due to the underlying sterile soils that are eroding and exposed at the surface. No evidence of P-19-002586 was observed during recent surveys of the project area.

In its existing condition, the project site is undeveloped and vacant and only consists of vegetation. Vegetation on the project site consists of Saltbrush Scrub, Undifferentiated Coastal Sage Scrub, *Rhus*-Dominated Coastal Sage Scrub, Exotic Woodland, and other disturbed vegetation. Due to the land movement, surface fractures exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean.

4.4.4 Regulatory Setting

This section includes applicable State, regional, and City regulations.

4.4.4.1 State Regulations

California Environmental Quality Act Requirements. The California Environmental Quality Act (CEQA) defines a “historical resource” as a resource that meets one or more of the following criteria: (1) listed in, or determined eligible for listing in, the CRHR; (2) listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k); (3) identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) determined to be a historical resource by a project’s Lead Agency (PRC Section 21084.1 and *State CEQA Guidelines* Section 15064.5(a)). A historical resource consists of:

“Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.... Generally, a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” (*State CEQA Guidelines* Section 15064.5(a)(3)).

In accordance with *State CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment.

CEQA requires a Lead Agency to determine whether an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (*State CEQA Guidelines* Section 15064.5(c)). Prior to considering potential impacts, the Lead Agency must

determine whether an archaeological cultural resource meets the definition of a historical resource in *State CEQA Guidelines* Section 15064.5(c)(1). If the archaeological cultural resource meets the definition of a historical resource, it is treated like any other type of historical resource in accordance with *State CEQA Guidelines* Section 15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the Lead Agency determines whether it meets the definition of a unique archaeological resource as defined in *State CEQA Guidelines* Section 21083.2(g). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. Should the archaeological cultural resource meet the definition of a unique archaeological resource, it must be treated in accordance with *State CEQA Guidelines* Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, the effects to the resource are not considered significant effects on the environment (*State CEQA Guidelines* Section 15064.5(c)(4)).

California Public Resources Code Section 5097.5. PRC Section 5097.5 provides for the protection of cultural resources and prohibits the removal, destruction, injury, or defacement of archaeological features on any lands under the jurisdiction of State or local authorities.

California Health and Safety Code Section 7050.5. California Health and Safety Code (HSC) Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

California Register of Historical Resources (PRC Section 5020 et seq.) State law also protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the *State CEQA Guidelines*. These criteria are nearly identical to those of the NRHP.

PRC Section 5024.1 states the following:

- (a) A California Register of Historical Resources is hereby established. The California Register is an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The commission shall oversee the administration of the California Register.
- (b) The California Register shall include historical resources determined by the commission, according to procedures adopted by the commission, to be significant and to meet the criteria in subdivision (c).

- (c) A resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria:
- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
 - (2) Is associated with the lives of persons important in our past.
 - (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
 - (4) Has yielded, or may be likely to yield, information important in prehistory or history.

The SHPO maintains the CRHR. Properties listed, or formally designated eligible for listing, on the NRHP are nominated to the CRHR and then selected to be listed on the CRHR, as are the State Landmarks and Points of Interest.

Assembly Bill 52. Signed into law in September 2014, California AB 52 created a new class of resources—tribal cultural resources—for consideration under CEQA. Tribal cultural resources may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing in the CRHR. AB 52 requires that the lead CEQA agency consult with California Native American tribes that have requested consultation for projects that may affect tribal cultural resources. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause a substantial adverse change to a tribal cultural resource constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

For further information regarding tribal consultation, refer to Section 4.14, Tribal Consultation Resources.

4.4.4.2 Regional Regulations

There are no regional or county regulations applicable to cultural resources relevant to the proposed project.

4.4.4.3 Local Regulations

City of Rancho Palos Verdes General Plan. The City's General Plan Conservation and Open Space Element (City of Rancho Palos Verdes 2018b) provides a discussion of the basic ecological and environmental units dealing with the natural factors of land, climate, hydrology, biotic resources, geotechnical factors, as well as the systematic relationships that must exist among them. The element discusses these environmental units as they apply individually to Rancho Palos Verdes and

in combination with the preservation of natural resources and open space and of public health and safety. The element also focuses on cultural resources (, historical, and archeological resources) and their conservation. The following goals and policies related to cultural resources are presented in the Conservation and Open Space Resources Element and are applicable to the proposed project:

- **Goal 2:** To protect and preserve all significant archaeological, paleontological, and historical resources within the City.
- **Policy 31:** Preserve locations of archeological and paleontological significance on site where possible. Allow salvage excavation of the site where preservation cannot be implemented.

City of Rancho Palos Verdes Municipal Code. The following City of Rancho Palos Verdes Municipal Code sections are relevant to cultural resources:

- **Section 17.32.030, Uses and development permitted:** Establishes permitted uses and development types in the Open Space Hazard (OH) zone including preservation of areas of outstanding scenic, geologic, historic, or cultural value.

4.4.5 Thresholds of Significance

The thresholds for cultural resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to cultural resources if it would:

- Threshold 4.4.1:** Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of CEQA.
- Threshold 4.4.2:** Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA.
- Threshold 4.4.3:** Disturb any human remains, including those interred outside of formal cemeteries.

4.4.6 Project Impacts

- Threshold 4.4.1:** Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of CEQA.

No Impact. Historical resources are defined in Section 4.4.4.2, above, as any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. As indicated above, a cultural resources assessment was conducted.

According to the Cultural Resource Assessment (Chambers 2022), based on the results of the records search and field survey, three previously recorded cultural resource sites have been identified within or adjacent to the project site. One historical resource, P-19-177478, is located

adjacent to the project site, and two cultural resources (P-19-00253 and P-19-002586) are located within the project site. None of these sites were determined to be on or eligible for the CRHR, and they are not historical resources pursuant to Section 15064.5 of the *CEQA Guidelines*. Therefore, the project would result in no impact to historical resources pursuant to Section 15064.5 of CEQA.

Threshold 4.4.2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA?

Less Than Significant with Mitigation Incorporated. The Cultural Resource Assessment prepared for the proposed project identified two archaeological resources on the project site and one resource adjacent to the project site, based on the results of the record search and field survey. Two cultural resources—P-19-002253, a prehistoric cultural resource, and P-19-002586, a prehistoric and historic cultural resource—are located within the project site.

As indicated above, the subsurface testing and site record notes of P-19-002253, a deposit of marine shell and lithic debitage, did not result in significant findings. Further, half of the site was destroyed by construction and agricultural activity on the site, and no evidence of P-19-002253 was observed during surveys. Given that there is no ground disturbance proposed near the site, the Cultural Resource Assessment concluded that the project would not result in impacts to this site.

P-19-002586, which is described as a deposit of marine shell and lithic debitage as well as a historic refuse deposit consisting of construction debris, is indicated to be in fair condition, although it is considered disturbed due to the underlying soils that are eroding. No evidence of P-19-002586 was observed during the surveys.

The project design also includes the conversion of the primary staging area to a surface water run-off retention area after its utilization as a staging area. The primary staging area was observed during all survey efforts. Although the entire primary staging area was accessible for survey, the ground surface visibility was impeded by dense vegetation. Due to limited visibility, proposed ground disturbance associated with the project feature, and the potential to discover unknown resources, there remains a potential that resources could be present and encountered during ground-disturbing activity. However, given that the stockpile area would utilize the existing roadside shoulder that is graded and maintained, and because there is no ground disturbance proposed within or near the site, with implementation of mitigation measures RCM CUL-1, MM CUL-1, MM CUL-2, MM CUL-3, MM CUL-4, and MM CUL-5, potential impacts to archaeological resources would be reduced to less than significant levels. Therefore, the proposed project would result in a less than significant impact to archaeological resources pursuant to §15064.5 of CEQA.

Threshold 4.4.3: Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. As indicated above, a request for an SLF records search with the NAHC was sent on July 13, 2020, and AB 45 notification letters were also sent on behalf of the City in August 2020. Results of the SLF request were returned negative for the project area and its surrounding 0.5-mile radius study area on July 17, 2020. As a result of the AB 52 consultation letters sent on behalf of the City, the Gabrielino Tongva Indians of California Tribal Council responded on

August 13, 2020, with a request to engage in formal consultation with the City. No other response was received from any other tribes regarding the project. As indicated in RCM CUL-1, in the event that human remains are discovered during ground-disturbing activities, the proposed project would be subject to HSC 7050.5, CEQA Section 15064.5, and PRC Section 5097.98. If human remains are found during ground-disturbing activities, HSC Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. Implementation of RCM CUL-1 would ensure that any potential impacts to unknown buried human remains would be less than significant.

4.4.7 Level of Significance Prior to Mitigation

No impacts to historical resources would occur. Prior to mitigation, the proposed project has the potential to result in significant impacts to archaeological resources.

4.4.8 Regulatory Compliance Measures and Mitigation Measures

4.4.8.1 Regulatory Compliance Measures

RCM CUL-1 In the event that human remains are discovered during ground-disturbing activities, the proposed project would be subject to California Health and Safety Code (HSC) 7050.5, California Environmental Quality Act (CEQA) Section 15064.5, and California Public Resources Code (PRC) Section 5097.98. If human remains are found during ground-disturbing activities, HSC Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials (NPS 1983).

4.4.8.2 Mitigation Measures

MM CUL-1 Retaining a Qualified Archaeologist. Prior to commencing construction, the City of Rancho Palos Verdes (City) shall retain the services of a Qualified Archaeologist meeting the Secretary of the Interior's Standards. During project-related ground-disturbing construction activities all initial ground-disturbing work shall be monitored by the City's Archeologist (i.e., an Archaeological Resources Monitor) proficient in artifact and feature identification in monitoring contexts.

MM CUL-2 Worker Environmental Awareness Program (WEAP). Prior to commencing construction activities (and thus prior to any ground disturbance on the proposed project site), the City's Qualified Archaeologist shall conduct initial Worker Environmental Awareness Program (WEAP) training of all construction personnel, including supervisors, present at the outset of the project construction work phase, for which the lead contractor and all subcontractors shall make their personnel

available. This WEAP training will educate construction personnel on how to work with the Qualified Archaeologist to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be performed periodically, such as for new personnel coming on to the project as needed.

MM CUL-3 Monitoring During Ground-Disturbing Activities. Prior to commencing construction, the Project Contractor shall provide the City's Qualified Archaeologist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours' notice will be provided to the consultant prior to commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation.

The Qualified Archaeologist shall be present on site at the commencement of ground-disturbing activities related to the project. The Qualified Archaeologist shall observe initial ground-disturbing activities and, if determined appropriate, adjust the number of monitors as needed to provide adequate observation and oversight. The Qualified Archaeologist will have stop-work authority to allow for recordation and evaluation of finds during construction. The Qualified Archaeologist will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the project.

The City's Qualified Archaeologist, Project Contractor, and subcontractors, and the City shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance in order to provide appropriate oversight.

MM CUL-4 Discovery of Previously Unidentified Archaeological Materials. In the event of the discovery of previously unidentified archaeological materials, the Project Contractor shall immediately cease all work activities within an area of no less than 50 feet of the discovery. After cessation of excavation, the Project Contractor shall immediately contact the City. The discovery of any cultural resource within the project area shall not be grounds for a project-wide "stop-work" notice or otherwise interfere with the project's continuation except as set forth in this paragraph. In the event of an unanticipated discovery of archaeological materials during construction, the City's Qualified Archaeologist shall evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and cannot be avoided, the City shall implement an archaeological data recovery program.

MM CUL-5 Archaeological Resources Monitoring Report. Within 60 days of the completion of all ground-disturbing activities, the City's Archaeologist, serving as the City's Archaeological Monitor, shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any

and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the South Central Coastal Information Center (SCCIC), as required.

4.4.9 Level of Significance after Mitigation

No impacts to known cultural resources would occur; however, there is a potential to encounter previously unknown cultural resources or unknown buried human remains during construction of the proposed project. RCM CUL-1 and MM CUL-1 through MM CUL-5 would reduce potential impacts to archaeological resources and previously undiscovered buried human remains to a less than significant level. No significant unavoidable impacts to archaeological resources or human remains would occur with implementation of these measures. After mitigation has been implemented, all anticipated impacts to cultural resources would be considered less than significant.

4.4.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for cultural resources. The cumulative impact area for cultural resources for the proposed project is the city of Rancho Palos Verdes. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing cultural resources and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site.

Potential impacts of the proposed project to unknown cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in Rancho Palos Verdes, could contribute to a cumulatively significant impact due to the overall loss of archaeological artifacts and cultural remains unique to the region. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to archaeological resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.

As such, implementation of Regulatory Compliance and Mitigation Measures RCM CUL-1 and MM CUL-1 through MM CUL-5 would ensure that the proposed project, together with cumulative projects, would not result in a significant cumulative impact to unique archaeological resources and previously undiscovered buried human remains.

4.5 ENERGY

This section discusses energy use resulting from implementation of the Portuguese Bend Landslide Remediation Project (proposed project) and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency. The energy use analysis in this section is based on information from the California Emissions Estimator Model™ (CalEEMod) version 2016.3.2 modeling results in the *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis* (Vista 2022), which is contained in Appendix B of this Environmental Impact Report (EIR).

4.5.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there are public comments received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One comment letter included comments related to energy:

- The letter by Ken Dyda received on January 3, 2021, asks how energy generated by the proposed project would compare to current conditions.

4.5.2 Methodology

The analysis of energy usage is based on the CalEEMod modeling conducted by Vista Environmental Consulting (Vista) (2022), which quantifies energy use for project construction. Fuel consumption (diesel fuel and gasoline) from vehicle trips during operation was estimated for the opening year (2023) of the proposed project based on trip estimates from CalEEMod and the project's *Transportation Assessment Portuguese Bend Landslide Project* (Transportation Assessment) (Appendix H) prepared by Linscott, Law & Greenspan on January 2023, and fuel efficiencies from the California Air Resources Board (CARB) EMFAC2017 model. Estimates of fuel consumption (diesel fuel and gasoline) from construction trucks and construction worker vehicles were based on trip estimates from CalEEMod and the Transportation Assessment, and estimates of fuel efficiencies were based on the CARB EMFAC2017 model.

The analysis focuses on the sources of energy that would be utilized by the proposed project, which include petroleum fuel (diesel and gasoline) and electricity. No natural gas would be utilized as part of the proposed project; as such, no further analysis is provided on natural gas consumption in this chapter. For the purposes of this analysis, the amounts of electricity and construction fuel are quantified. The electricity use of the proposed project is analyzed as a whole on an annual scale.

4.5.3 Existing Environmental Setting

4.5.3.1 Electricity

Electricity is a man-made resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, or nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems) (EIA 2019).

According to the most recent data available, in 2021, California’s electricity was generated primarily by natural gas (50.02 percent), coal (0.2 percent), large hydroelectric (6.2 percent), nuclear (8.5 percent), other (waste heat/petroleum coke) (0.2 percent) and renewable sources (34.8 percent). Total electric generation in California in 2021 was 277,764 gigawatt-hours (GWh), up 2 percent from the 2020 total generation of 272,576 GWh. In 2021, California produced approximately 70 percent and imported approximately 30 percent of the electricity it used (CEC 2022a).

The project site is within the service territory of Southern California Edison (SCE) and Southern California Gas Company (SoCalGas). SCE supplies electric utilities and service to approximately 15 million people in portions of 15 counties and hundreds of cities in a 50,000 square-mile service area in central, coastal, and southern California (SCE 2019). According to the California Energy Commission (CEC), total electricity consumption in SCE’s service area in 2021 was 81,129.0 GWh (CEC 2021c). Total electricity consumption in Los Angeles County in 2021 was 65,374.7 GWh (CEC 2021b). SoCalGas supplies natural gas utilities and services to approximately 21.8 million customers in its approximately 24,000-square-mile service area throughout central and southern California. According to the CEC, total natural gas consumption in SoCalGas’ service area in 2021 was 5,101 million therms (CEC 2021e). Total natural gas consumption in Los Angeles County in 2021 was 2,881 million therms (CEC 2021d).

4.5.3.2 Petroleum/Transportation Energy

Petroleum is also a nonrenewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the Earth’s surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil and gasoline.

Petroleum-based fuels currently account for a majority of California’s transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the State has been working on developing strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined. In 2017, 3,659 million gallons of gasoline and 300 million gallons of diesel was sold in Los Angeles County.

4.5.4 Regulatory Setting

4.5.4.1 Federal Regulations

Corporate Average Fuel Economy. Congress first passed the Corporate Average Fuel Economy (CAFE) law in 1975 to increase the fuel economy of cars and light-duty trucks. CAFE standards are federal regulations that are set to reduce energy consumed by on-road motor vehicles. The National Highway Traffic Safety Administration (NHTSA) regulates the standards and the United States Environmental Protection Agency (USEPA) measures vehicle fuel efficiency. The standards specify minimum fuel consumption efficiency standards for new automobiles sold in the United States. The law has become more stringent over time. The current standard is 49 miles per gallon (mpg) for passenger cars and light-duty trucks in model year 2026.

On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the USEPA and the United States Department of Transportation's (USDOT) NHTSA announced a joint final rule establishing a national program that would reduce greenhouse gas (GHG) emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. This phase required these vehicles to meet a fuel economy standard of 35.5 mpg. The second phase applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 through 2025. This phase required these vehicles to meet an estimated fuel economy standard of 54.5 mpg. According to the latest round of public comments on the NHTSA's August 2021 proposed for model year 2024–2026 CAFÉ standards and accompanying Draft Environmental Impact Statement, the final rule establishes standards that would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks (NHTSA 2019).

Safer Affordable Fuel-Efficient Vehicles Rule. On August 2, 2018, the current Administration released a notice of proposed rulemaking, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule)* to amend the CAFE and GHG emission standards established in 2012 for model years 2021 through 2026. The SAFE Vehicles Rule would decrease fuel economy and would withdraw the California waiver for the California Advanced Clean Car Program, zero emissions vehicle mandate, and GHG emission standards for model years 2021 through 2026. The SAFE Vehicles Rule was issued on March 31, 2020, by NHTSA and USEPA, and sets challenging but feasible fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026. These standards apply to both passenger cars and light trucks.

4.5.4.2 State Regulations

Assembly Bill 1575, Warren-Alquist Act. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs; license power plants of 50 megawatts (MW) or larger; develop energy technologies and renewable energy resources; plan for and direct State responses to energy emergencies; and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require EIRs to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and efficient use of energy and the means of achieving this goal, including: (1) decreasing overall per-capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting. In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an *Integrated Energy Policy Report* every 2 years and an update every other year. The most recently adopted reports include the *2021 Integrated Energy Policy Report* (CEC 2021a) and the *2022 Integrated Energy Policy Report Update* (CEC 2022b). The *2021 Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The *2021 Integrated Energy Policy Report* covers a broad range of topics, including implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas, updates on Southern California's electricity reliability, natural gas outlook, and climate adaptation and resiliency. The *2022 Integrated Energy Policy Report Update* included a review of the implementation of California's energy policies and updated the 2021 California energy demand forecasts that were adopted as part of the *2021 Integrated Energy Policy Report* proceedings.

Renewable Portfolio Standards. SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the requirement to 60 percent by 2030 and required that all the State's electricity come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019 (CPUC 2019).

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years, and the current 2022 CBC went into effect on January 1, 2023. The efficiency standards apply to both new construction and rehabilitation of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency

standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

California Green Building Standards Code (CALGreen Code). CCR Title 24, Part 11, the California Green Building Standards Code (CALGreen Code) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CALGreen Code is also updated every 3 years; the current version is the 2019 CALGreen Code, and the 2022 CALGreen Code went into effect on January 1, 2023.

The CALGreen Code contains requirements for construction site selection; stormwater control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options, allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy-efficient appliances, renewable energy, graywater systems, water-efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, stormwater management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2022 CALGreen Code over the prior 2019 CALGreen Code for nonresidential development mandatory requirements include repeal of the designated parking spaces for clean air vehicles, an increase in the number of electric vehicle (EV) ready parking spaces and a new requirement for installed Level 2 or Direct Current Fast Charging (DCFC) EV charging stations for automobiles and added EV charging readiness requirements to loading docks, enhanced thermal insulation requirements, and acoustical ceiling requirements.

Executive Order N-79-20. The California Governor issued Executive Order (EO) N-79-20 on September 23, 2020. EO N-79-20 requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emission by the year 2035 and all medium to heavy-duty vehicles (commercial trucks) sold in the State to be zero-emission by 2045 for all operations where feasible. EO N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035.

Assembly Bill 1493. California AB 1493 (also known as the Pavley Bill, in reference to its author, Fran Pavley) was enacted on July 22, 2002, and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. In 2004, CARB approved the "Pavley I" regulations, limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the USEPA granted

California the authority to implement GHG emission reduction standards for light-duty vehicles. In September 2009, amendments to the Pavley I regulations were adopted by CARB, and implementation of the “Pavley I” regulations started in 2009.

The second set of regulations, “Pavley II,” was developed in 2010. Pavley II is being phased in between model years 2017 through 2025, with the goal of reducing GHG emissions by 45 percent by 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle Standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars, promote zero-emissions auto technologies such as electricity and hydrogen, and increase the infrastructure for fueling hydrogen vehicles. In 2009, the USEPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport utility vehicles. These GHG emissions standards are currently being implemented nationwide.

The USEPA has performed a midterm evaluation of the longer-term standards for model years 2022–2025. Based on the findings of this midterm evaluation, the USEPA proposed the SAFE Vehicles Rule, which amends the CAFE and GHG emissions standards for light vehicles for model year 2021 through 2026. The SAFE Vehicles Rule was published on April 30, 2020, and made effective on June 29, 2020.

4.5.4.3 Regional Regulations

There are no regional energy regulations that apply to the proposed project.

4.5.4.4 Local Regulations

The City has adopted the 2022 CALGreen Code and incorporated it by reference into Rancho Palos Verdes Municipal Code (Title 15, Buildings and Construction, Chapter 15.04: Building Code).

Additionally, the City’s General Plan Circulation Element contains goals and policies that relate to energy use. The following goals and policies addressed in this chapter pertain to energy use for the proposed project:

- **Policy 33:** Ensure that the resource companies provide all areas of the City with adequate service, including adequate backup and growth capabilities.
- **Policy 34:** Encourage the use of alternative water and energy generation sources.
- **Policy 35:** Promote, practice, and encourage workable energy and water conservation techniques.
- **Policy 36:** Review any proposed development, major new resource uses, or significant changes to resource systems for impacts to the surrounding neighborhood and community.

- **Policy 37:** Encourage the use of recycled/reclaimed water in the irrigation of large open space areas, including golf courses, open space areas owned by homeowners' associations, and City parks and ballfields.
- **Policy 38:** Encourage the California Water Company to complete a conservation plan that provides for the availability of a recycled water system in the City.
- **Policy 39:** Underground all new power lines and communications cables and implement programs to place existing lines and cables underground, where feasible.
- **Policy 40:** Encourage the establishment of undergrounding assessment districts by homeowners in areas of existing overhead lines.
- **Policy 41:** Investigate funding sources to be used in local undergrounding programs for areas of existing overhead lines.

4.5.5 Thresholds of Significance

The thresholds for energy impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to energy if it would:

Threshold 4.5.1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

Threshold 4.5.2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.5.6 Project Impacts

Threshold 4.5.1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Energy resources that would be potentially impacted include electricity and petroleum based fuel supplies and distribution systems. The hydrauger operation, including filling of the tanks and tank discharge, will be gravity fed and discharged, however, emergency pumps on the project site would be gasoline powered tanks. The emergency pumps would only be used on an as-needed basis, and use would be minimal and would not substantially impact energy resources. Additionally, a limited number of vehicle trips would be associated with the operation, inspection, and maintenance of the project components and would be conducted on a limited as-needed basis. The vehicle trips would also not be expected to result in a substantial increase in energy resources. No further analysis is provided on natural gas consumption in this EIR. As indicated above, the proposed project is limited to landslide remediation activities, which are considered construction activity types; as such, no operational energy use would occur from the proposed project.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2021, Los Angeles County consumed 65,374.7 GWh of electricity (CEC 2019a).

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the State has been working on developing strategies to reduce its petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce VMT. Accordingly, petroleum-based fuel consumption in California has declined. In 2017, 3,659 million gallons of gasoline and 300 million gallons of diesel fuel were sold in Los Angeles County.

The following section calculates the potential energy consumption associated with the construction of the proposed project and provides a determination if any energy utilized by the proposed project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy. The proposed project would consume energy resources during construction in three general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and delivery and haul truck trips (e.g., hauling of materials to disposal facilities);
2. Electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Construction-Related Electricity. During construction, the proposed project would consume electricity implementing the landslide remediation project. Due to the temporary nature of the needs for electricity during proposed project construction, all electricity used on site will be supplied by portable diesel generators that have been analyzed below under Construction-Related Petroleum Fuel Use. Construction activities would include off-site electricity usage provided by SCE for the conveyance of water that would be required during project construction for dust control (supply and conveyance) and electricity utilized for the production and distribution of materials that will be used during construction of the proposed project. Such electricity demand would be temporary and nominal and would cease upon the completion of

construction. Overall, construction activities associated with the proposed project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary. Compliance with the City’s guidelines and requirements would ensure that the proposed project fulfills its responsibilities in coordination of any electrical infrastructure removals or relocations and limits any impacts associated with project construction. Construction of the project’s electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or the utility system’s capacity.

Construction-Related Petroleum Fuel Use. Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction. Petroleum-based fuel would be utilized by both off-road equipment operating on the project site and on-road automobiles transporting workers to and from the project site, as well as on-road trucks transporting equipment and supplies to the project site. Tables 4.5.A and 4.5.B describe the fuel consumption from off-road and on-road equipment during construction of the proposed project. The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions depicted in the *Air Quality, Energy, and GHG Impact Analysis* (Vista 2022) found in Appendix B of this EIR.

Table 4.5.A: Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project

Equipment Type	Quantity	Horsepower	Load Factor	Operating Hours/day	Total Operational Hours ¹	Fuel Used (gallons)
Staging Areas and Access Routes						
Rubber-Tired Dozers	3	247	0.4	8	528	2,693
Tractors/Loaders/Backhoes	4	97	0.37	8	704	1,450
Surface Fracturing Infilling						
Excavator	1	158	0.38	8	1,040	3,224
Pump	1	84	0.74	8	1,040	3,710
Rubber-Tired Dozer	1	247	0.4	8	1,040	5,305
Tractors/Loaders/Backhoes	2	97	0.37	8	2,080	4,284
Surface Water Improvements						
Excavator	1	158	0.38	8	1,056	3,273
Forklift	1	89	0.20	8	1,056	1,079
Pump	1	84	0.74	8	1,056	3,767
Tractors/Loaders/Backhoes	3	97	0.37	8	3,168	6,525
Hydraugers						
Bore/Drill Rig	1	221	0.50	8	1,056	6,024
Forklift	1	89	0.20	8	1,056	1,079
Generator	1	84	0.74	8	1,056	3,767
Pump	1	84	0.74	8	1,056	3,767
Tractors/Loaders/Backhoes	1	97	0.37	8	1,056	2,175
Welder	1	46	0.37	8	1,056	1,032
Total Off-Road Equipment Diesel Fuel Used during Construction (gallons)						53,154

Sources: CalEEMod Version 2020.4.0; California Air Resources Board (2017).

¹ Based on 22 days for Staging Areas and Access Routes, 130 days for Surface Fracturing Infilling, 132 days for Surface Water Improvements, and 132 days for Hydraugers.

Table 4.5.B: On-Road Vehicle Trips and Fuel Consumption from Construction of the Proposed Project

Vehicle Trip Types/Fuel Type	Daily Trips	Trip Length (miles)	Total Miles/day	Total Miles/Phase ¹	Fleet Average Miles/Gallon ²	Fuel Used (gallons)
Staging Areas and Access Routes						
Worker (Gasoline)	22	14.7	323	4,851	26.8	266
Truck (Diesel)	60	20	1,200	12,120	8.7	3,035
Surface Fracturing Infilling						
Worker (Gasoline)	22	14.7	323	4,851	26.8	1,571
Truck (Diesel)	60	20	1,200	12,120	8.7	17,932
Surface Water Improvements						
Worker (Gasoline)	22	14.7	323	4,851	26.8	1,595
Truck (Diesel)	60	20	1,200	12,120	8.7	18,208
Hydraugers						
Worker (Gasoline)	22	14.7	323	84,128	26.8	1,595
Truck (Diesel)	60	20	1,200	15,394	8.7	18,208
Total Gasoline Fuel Used From On-Road Construction Vehicles (gallons)						5,027
Total Diesel Fuel Used From On-Road Construction Vehicles (gallons)						57,384

Source: CalEEMod Version 2020.4.0; California Air Resources Board (2017).

¹ Based on 22 days for Staging Areas and Access Routes; 130 days for Surface Fracturing Infilling, 132 days for Surface Water Improvements, and 132 days for Hydraugers.

Table 4.5.A and Table 4.5.B show that construction of the proposed project would consume 5,027 gallons of gasoline and 110,538 gallons of diesel fuel (off-road equipment and on-road equipment diesel fuel total). This equates to 0.0001 percent of the gasoline and 0.04 percent of the diesel fuel used annually in Los Angeles County. As such, the construction-related petroleum use would be nominal when compared to current countywide petroleum usage rates.

Construction activities associated with the proposed project would be required to adhere to all State and South Coast Air Quality Management District regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the proposed project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete, but it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant.

Threshold 4.5.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The applicable energy plan for the proposed project is the City’s General Plan (City of Rancho Palos Verdes 2018a). The proposed project’s consistency with the applicable energy-related policies in the Chapter IV of the General Plan are shown in Table 4.5.C.

Table 4.5.C: Proposed Project Compliance with Applicable General Plan Energy Policies

Policy No.	General Plan Policy	Proposed Project Implementation Actions
33	Ensure that the resource companies provide all areas of the City with adequate service, including adequate backup and growth capabilities.	Not Applicable. This policy is for the energy resource companies (i.e., California Water Company, SCE, and SoCal Gas) to implement; however, it should be noted that the proposed project would not result in any permanent population or employment growth in the city.
34	Encourage the use of alternative water and energy generation sources.	Consistent. The water collected through the subsurface drainage system will be collected into water storage tanks. The collected water will be tested for water quality. If the water tests at acceptable levels, it will be possibly utilized for landscaping irrigation purposes.
35	Promote, practice, and encourage workable energy and water conservation techniques.	Consistent. All construction activities will be required to meet the Title 24, Part 11, CALGreen Code requirements that require a variety of construction energy reduction measures, including requirements for recycling construction waste and electricity and water conservation measures.
36	Review any proposed development, major new resource uses, or significant changes to resource systems for impacts to the surrounding neighborhood and community.	Not Applicable. This policy is for the City to implement; however, the proposed project would not require any changes to the City’s resource systems.
37	Encourage the use of recycled/reclaimed water in the irrigation of large open space areas, including golf courses, open space areas owned by homeowners’ associations, and City parks and ballfields.	Consistent. The water collected through the subsurface drainage system will be collected into water storage tanks. The collected water will be tested for water quality. If the water tests at acceptable levels, it will be possibly utilized for landscaping irrigation purposes.
38	Encourage the California Water Company to complete a conservation plan that provides for the availability of a recycled water system in the City.	Not Applicable. This policy is for California Water Company to implement.
39	Underground all new power lines and communications cables and implement programs to place existing lines and cables underground, where feasible.	Not Applicable. The proposed project does not include installation of any new power lines or communication cables. Emergency pumps would be gasoline tank-powered and would not require extensions of any existing natural gas pipelines onto the project site.
40	Encourage the establishment of undergrounding assessment districts by homeowners in areas of existing overhead lines.	Not Applicable. This policy is for the City to implement. The proposed project does not include installation or relocation of any power lines.
41	Investigate funding sources to be used in local undergrounding programs for areas of existing overhead lines.	Not Applicable. This policy is for the City to implement. The proposed project does not include installation or relocation of any power lines.

Source: City of Rancho Palos Verdes General Plan (2018).

CALGreen Code = California Green Building Standards Code

SoCalGas = Southern California Gas Company

SCE = Southern California Edison

As shown in Table 4.5.C, the proposed project would be consistent with all applicable energy-related policies from the Circulation Element of the City's General Plan. Therefore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Impacts would be less than significant, and no mitigation is required.

4.5.7 Level of Significance Prior to Mitigation

Energy impacts related to the inefficient, wasteful, and unnecessary consumption of energy are considered less than significant, and no mitigation is required.

4.5.8 Regulatory Compliance Measures and Mitigation Measures

4.5.8.1 Regulatory Compliance Measures

No regulatory compliance measures are required for the proposed project.

4.5.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.5.9 Level of Significance after Mitigation

Construction and operational impacts related to energy use would be less than significant. No mitigation is required.

4.5.10 Cumulative Impacts

The geographic area for electricity and natural gas is that of SCE's and SoCal Gas' boundaries. The proposed project would result in an increased services demand for electricity and petroleum during construction. Although the proposed project would result in a net increase in electricity use, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts. As discussed previously, the total annual electricity consumption within SCE's service area in 2021 was 81,129.0 GWh (CEC 2019b). By 2030, consumption is anticipated to decrease by approximately 0.2 percent for the low-demand scenario and increase by 1.1 percent for the high-demand scenario (CEC 2018). While this forecast represents a large increase in electricity consumption, the proposed project's percentage of cumulative consumption would be negligible. The proposed project, in combination with cumulative development, is well within SCE's systemwide net annual increase in electricity supplies over the 2020 to 2030 period, and there are sufficient planned electricity supplies in the region for estimated net increases in energy demands.

Similarly, additional natural gas infrastructure is not required to accommodate cumulative development because the proposed project would not utilize natural gas as an energy source. It is anticipated that SoCalGas would be able to meet the natural gas demand of the related projects without additional facilities. Increased energy efficiency to comply with building energy-efficiency standards will reduce energy consumption on a per-square-foot basis. In addition, utility companies are required to increase their renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. SoCalGas plans to continue to provide reliable service to its customers and upgrade its distribution systems as necessary to meet future demand.

Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and the total number of vehicle trips and VMT throughout Los Angeles County and the region. The proposed project and related projects are required to comply with various federal and State government legislation to improve energy efficiency in buildings, equipment, and appliances and to reduce VMT. Therefore, the proposed project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.

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4.6 GEOLOGY AND SOILS

This section provides a discussion of the existing geologic and soils environment and an analysis of potential impacts from implementation of the proposed Portuguese Bend Landslide Remediation Project (project). This section also addresses the potential for structural damage due to the local geology underlying the project site, as well as slope stability, ground settlement, soil conditions, grading, and regional seismic conditions. In addition, this section analyzes the potential for the proposed project to affect unknown paleontological resources on or within the vicinity of the project site. This section summarizes information provided in the *Cultural Resources and Paleontological Survey Results for the Rancho Palos Verdes Portuguese Bend Landslide Mitigation Project* (Paleontological Resources Assessment) (Chambers Group 2023) and the *Geological, Geotechnical, and Hydrogeological Review, Portuguese Bend Landslide Remediation, Rancho Palos Verdes, California* (Geotechnical Investigation) (H&A Consultants, Inc. 2023). These reports are provided in Appendices D and E of this Environmental Impact Report (EIR).

4.6.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there are public comments received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Twelve of the comment letters included comments related to geology and soils.

- The letter by the California Department of Conservation (DOC) received on January 12, 2021, requests that the EIR address the regional and site-specific geology and how geology influences landslide hazards and ground shaking hazards.
- The letter by the Abalone Cove Landslide Abatement District received on January 15, 2021, requests that the EIR include all relevant geological studies undertaken by the City.
- The letter by the Ken Dyda received on January 3, 2021, asks how the excavation required for the mitigation measures compares to the annual loss of topsoil due to the landslide.
- The letter by Laura Feldman received on December 10, 2020, requests that the project address erosion control.
- The letter by Lisa Gladstone and Milton Owens received on December 10, 2020, requests that the project address erosion control.
- The letter by the Infrastructure Management Advisory Committee (IMAC) received on December 19, 2020, requests that the EIR include evaluation of the installation of a possible new, second culvert beneath Palos Verdes Drive South in the vicinity of Peppertree Trail on the eastern side of the landslide.
- The letter by Noel Park received on January 13, 2021, states that it is a risky strategy to not have any current soil borings or a site geotechnical survey for this project.

- The letter by Sunshine received on December 8, 2020, requests that the EIR address erosion caused by the proposed project.
- The letter by Joan Taylor received on December 10, 2020, asks that the project address erosion control.
- The letter by an unknown source received on February 1, 2018, asks if the landslide mass is pulled off, revealing a brown layer, and asks about the history of the landslide complex.
- The letter by Lisa Wolf received on December 10, 2020, asks that the project address erosion control.
- The letter by Grace Yung received on December 10, 2020, asks that the project address erosion control.

4.6.2 Methodology

4.6.2.1 Geology and Soils

To assess the impacts of the proposed project with respect to geologic and soil conditions, H&A Consultants, Inc. conducted a geological, geotechnical, and hydrogeological review of the proposed project. The scope of the report included background review and review of readily available, publicly published references.

4.6.2.2 Paleontological Resources

Chambers Group conducted an initial pedestrian survey on August 14, 2020. The survey, performed by a paleontological surveyor, consisted of systematic surface inspection with transects at 10-meter intervals to ensure that any evidence of paleontological resources could be identified. In addition to the surface inspection, any safely accessible cliffsides and exposed subsurface profiles were investigated for any evidence of paleontological resources. Chambers Group conducted two supplemental surveys on April 28, 2022, and June 1, 2022, following design changes to the project in April 2022. Prior to the pedestrian survey, a records search through the Natural History Museum of Los Angeles County (LACM) was completed in August 2020.

4.6.3 Existing Environmental Setting

4.6.3.1 Site Description

The project is situated in the Portuguese Bend region, including the coastal region starting in the southwest at Portuguese Point, continuing east past Inspiration Point to Klondike Canyon, and extending inland to the north across Palos Verdes Drive into the Portuguese Bend Reserve just south of Portuguese Canyon. The project site is located within the southwestern structural block of the Los Angeles Basin portion of the Peninsular Ranges geomorphic province of California, where it is merging with the Transverse Ranges geomorphic province to the north. The Portuguese Bend Landslide (PBL) is a section of a much larger ancient landslide complex on the south side of the Palos Verdes Hills, one that had been previously dormant for possibly millennia. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the

Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site.

4.6.3.2 Regional Geologic Setting

The project site is located in the geologic structure of the Palos Verdes Hills. The Palos Verdes Hills are located south of the Southwestern block of the Los Angeles Basin in the Peninsular Ranges geomorphic province of California. The Los Angeles Basin is one of over 20 Neogene basins found throughout western California today. The Palos Verdes Hills consist mostly of Miocene marine sedimentary rock of the Monterey Formation, with some middle Miocene basalts and Pliocene-Pleistocene marine and terrace sediments. The Monterey Formation and its volcanic equivalents drape over the Mesozoic metamorphic basement in this portion of the Los Angeles Basin.

The highest point of the Palos Verdes Hills is approximately 1,473 feet above sea level at the San Pedro Hills of the Palos Verdes Uplift. Tectonic uplift of the hills occurred since the latest Miocene based on a tectonic reorganization of the Southern California region. Past studies show the Palos Verdes Hills' tectonic uplift occurring by dating remnants of marine terraces, chiefly over the past 400,000 years. The Palos Verdes Hills have 13 mappable marine terraces. While the average uplift rate of the Palos Verdes Peninsula is approximately 0.3 millimeter (mm)/year, the relative elevations of the younger marine terraces suggest that the rate of uplift varies across the doubly plunging anticline and may have accelerated during the latest Quaternary, reaching rates as high as 0.7 mm/year.

4.6.3.3 Local Geologic Setting

Miocene sediments make up most of the bedrock material on the Palos Verdes Hills. The project site is located on the Upper Altamira Shale member of the Monterey Formation. This part of the Altamira Shale weathers white and has thin beds of siliceous and phosphatic shale, with interbeds of limestone, dolostone, siltstone, and diatomaceous material. In the vicinity of Portuguese Bend, Upper Altamira Shale sediments have been disturbed by landslide movement and mechanical grading.

The Altamira Shale is estimated to have been deposited during an eruption of volcanism that consisted of thick layers of volcanic tuff. The tuff, when exposed to water, weathers into layers of bentonite clay that is the base of the PBL plane. San Onofre Breccia and the Catalina Schist are found at depth below the landslide, are not exposed at the surface, and are major contributors to the landslide areas.

4.6.3.4 Soil Expansion

Expansive surface soils contain clay particles that experience high volume changes following exposure to seasonal or man-made fluctuations in moisture content. The volume changes from these soils can negatively impact foundations and other improvements if mitigation methods are not implemented. The bentonite clays in the PBL are subject to significant volumetric changes with changes in moisture content.

4.6.3.5 Soil Collapse

Collapsible soils are soil structures subject to a large and sudden reduction in volume upon wetting and are often found in young alluvial deposits within arid or semi-arid environments. Collapsible soil structures contain granular particles with voids supported by a matrix of clay or silt particles or by carbonate cementation. Hydration of the matrix can result in a loss of support, resulting in densification and collapse of the soil structure. The resulting settlement can be severe enough to distress structures or improvements bearing on this soil.

4.6.3.6 Groundwater Conditions

The PBL is located within the West Coast of the Coastal Plain of the Los Angeles County Groundwater Basin (Basin). It is bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the east, it is bounded by the Newport-Inglewood Fault Zone, and on the south and west, it is bounded by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills. The water-bearing deposits of the West Coast Sub-Basin (Sub-Basin) include the unconsolidated and semi-consolidated marine and alluvial sediments of Holocene, Pleistocene, and Pliocene ages. Discharge of groundwater from the subbasin occurs primarily by pumping extractions.

Groundwater flow at the PBL is approximately defined to the north by the topographic crest of the hill near Crest Road, which is the approximate location of the surface water and groundwater flow divide. Surface water and groundwater that occurs north of Crest Road generally flows inland toward Pacific Coast Highway; surface water and groundwater that occurs south of Crest Road generally flows southward, through the PBL, and toward the Pacific Ocean. Surface water that falls or flows south of Crest Road may infiltrate and percolate into the PBL as groundwater. Groundwater at the PBL generally occurs in two water-bearing zones, a shallow and a deep zone.

Shallow Groundwater Zone. According to Leighton and Associates (1998), the shallow zone in the PBL is unconfined and present at depths ranging from approximately 5 to 110 feet below ground surface (bgs). In general, the shallowest occurrences of groundwater have been observed in the Landward Subslide, above the heads of the East-Central and West-Central subsides. Shallow groundwater typically flows above the bentonite clay layers (shear zones) that form the main slip or rupture zones (failure surfaces). The shallow groundwater zone receives recharge preferentially through local fractures, canyon bottoms, and infiltration of stormwater where canyons discharge onto alluvial fans, head slopes, sag ponds, and hummocky areas of the landslide area.

The horizontal hydraulic gradient of the unconfined groundwater of the shallow groundwater zone trends north to south, has a magnitude of approximately 0.10 foot of vertical head loss per horizontal foot (Leighton and Associates 1998), and mimics the general project site topographic gradient. Typical horizontal groundwater hydraulic gradients in aquifers range from 0.01 to 0.00001; by comparison, the gradient at the PBL is therefore unusually high. High horizontal hydraulic gradients can be indicative of low-permeability conditions, areas of intensive groundwater recharge, high topographic relief, faults, and other structural controls and/or groundwater extraction. Under homogeneous conditions, the direction of groundwater flow is generally parallel to the direction of the hydraulic gradient (in this case, north to south).

Deep Groundwater Zone. Deep groundwater originates in the upper part of the Portuguese Canyon drainage basin, is present below the landslide failure surfaces (rupture zones) and occurs under confined conditions under pressure (DBSA 2018). The deepest occurrences of groundwater have been observed north of the active landslide area and underlying the north-south-trending topographic ridge.

The occurrence of groundwater in the deep groundwater zone beneath the rupture zone is less understood than the shallow groundwater zone, and additional characterization would be needed for a clear understanding of the effect that deep groundwater has on the PBL's stability. Nested piezometers completed at four locations on the PBL indicate that groundwater occurs below the slide plane. Vertical hydraulic head measurements indicate that a downward vertical gradient occurs within the landslide mass and an even greater downward vertical gradient exists across the slide plane. The presence of these downward vertical gradients at the lower end of the hillslope was potentially attributed to increased groundwater recharge rates along the topographic surface of the landslide, including the presence of extensional ground fractures.

4.6.3.7 Seismicity and Faulting

A fault is described as the area where two tectonic or continental plates meet. An "active" fault is defined by the State of California as having had surface displacement within the Holocene time (i.e., within the last 11,000 years). A "potentially active" fault is defined as showing evidence of surface displacement during the Quaternary time (e.g., during the last 1.6 million years) (DOC 2007).

The project site is located within the Palos Verdes Hills, which contains many faults. The Cabrillo Fault, found in the eastern and trending to the central part of the Palos Verdes Hills, is a splay of the Palos Verdes Fault but has not been found to have any Holocene displacement. The closest identified Holocene fault to the project site is the Palos Verdes Fault, which is located about 3.7 miles north of the project site. Thus, surface fault rupture would not to be an issue in the PBL area. The Palos Verdes Fault can generate an earthquake with a maximum magnitude of $M=7.7$, which could cause an earthquake with the greatest magnitude in the vicinity of the Palos Verdes Hills. Since the Palos Verdes Fault is closest in proximity to the project site and would have the greatest earthquake magnitude, a maximum probable earthquake on the Palos Verdes Fault could cause extensive damage and slope failures within the PBL from strong motion during a maximum probable earthquake.

The other fault closest to the project having displaced during the Holocene is the Newport-Inglewood Fault Zone, which is approximately 10.3 miles northeast of the project site. This fault is considered capable of producing an earthquake with a magnitude of 7.5, which is considered a very powerful earthquake and could cause massive amounts of damage and slope failures within the Palos Verdes Hills. Because of the fault's distance from the landslide, there is a limited potential for surface fault rupture from this fault on the PBL, although there could be slope failures on the Palos Verdes Hills from strong motion during a maximum probable earthquake.

According to an article published in the *Los Angeles Times* on September 23, 2022, the Palos Verdes Fault Zone has been determined to contain a system of interconnected, closely spaced planar fractures stretching from the Santa Monica Bay to the waters off Dana Point (*Los Angeles Times*

2022). Analysis of this fault zone has determined that the fault system has a much larger surface area that could rupture in a seismic event, making it capable of a powerful earthquake of up to 7.8 magnitude, comparable to an earthquake from the San Andreas Fault.

The Los Angeles Basin is known for its blind thrust faults, which are thrust faults that do not break the earth's surface. The potential of large earthquakes with no surface ground rupture from blind thrust faults is high in the Los Angeles Basin. Moderate shaking from an earthquake on one of the closer Los Angeles Basin blind thrust faults could possibly be detected throughout the Palos Verdes Hills, cause low to moderate damage to buildings and infrastructure, and cause creep on the PBL to increase or reoccur.

4.6.3.8 Subsidence

Subsidence is the sinking or settlement of the ground surface relative to the surrounding area, with little or no horizontal movement. Four types of land subsidence are known to occur in California. In descending order of significance, these are: (1) subsidence caused by aquifer system compaction related to the lowering of groundwater levels, generally due to pumping activities; (2) subsidence caused by hydrocompaction of soils above the groundwater table; (3) subsidence related to extraction of oil and gas deposits; and (4) subsidence related to seismic activity.

Because the project site is in an area that experiences seismicity, subsidence could also occur on the PBL during a large earthquake, when loose, fractured, or porous materials consolidate from moderate to large earth shaking in the formation of small depressions. The withdrawal of water during dewatering of the landslide or adding artificial fill may also be another source for potential subsidence on the landslide.

Additionally, mobile clay along the slide plane of the PBL consists essentially of bentonite or montmorillonite and is thought to be extruded from the slip planes as they emerge below sea level in the San Pedro Bay, south of where the landslide toes out below the ocean. Removal of this clay from possible oversaturation makes the clay flow like liquid beneath portions of the slide area and is likely responsible for subsidence east of Portuguese Canyon. Subsidence from clay extrusion from the PBL area could be a problem and needs to be checked periodically to determine whether the loss of clay along the slide plane is continuing or if has stopped.

4.6.3.9 Liquefaction

Liquefaction involves the sudden loss in strength of a saturated, cohesionless soil (predominantly sand) caused by the buildup of pore water pressure during cyclic loading, such as that produced by an earthquake. This increase in pore water pressure can temporarily transform the soil into a fluid mass, resulting in vertical settlement, and can also cause lateral ground deformations. Typically, liquefaction occurs in areas where there are loose sands and the depth to groundwater is less than 50 feet from the surface. Seismic shaking can also cause soil compaction and ground settlement without liquefaction occurring, including settlement of dry sands above the water table.

The beach sands at the toe of the PBL are saturated with ocean water based on sea level and the uprun by the wave action. Although the sands contain gravels and cobbles, the sands between the coarser-grained material could liquefy. If the beach sands liquefy during a seismic event, the coastal

bluffs along the landslide toe could become unstable. The onshore portion of the project site includes landslide materials that consist of a mixture of clay, silt, sand, gravel, and cobbles with boulders. The liquefaction potential on the onshore portion of the landslide is unknown at this time, although according to the DOC Seismic Hazards Program: Liquefaction Zones Map, the project site is not located in a liquefaction zone.

4.6.3.10 Seismic Generated Tsunami

The project site is on the eastern portion of the Pacific Ocean, known as the Circum-Pacific Belt. Very large offshore earthquakes and volcanic eruptions, associated with subduction zone thrusting, have been known to occur along the rim of the Circum-Pacific Belt. When certain types of earthquakes of large magnitudes occur within this region, there may be a tsunami potential throughout the Pacific Ocean. During a seismic event, if there is complete rupture of the fault and the rupture reaches the sea floor with particularly large vertical displacements, the displacement of the sea floor would likely generate a tsunami. The greater the displacement in a short period of time, the larger the tsunami. Other factors that would control the size of the tsunami wave would be distance or how sheltered the area is from the open sea. These factors could decrease the intensity of a tsunami.

The type of shoreline affects the intensity of a tsunami. Along coasts consisting of elevated sea bluffs, the runup would be more intense, with more copious amounts of bluff erosion and damage than with a tsunami of the same intensity inundating an estuary or low-lying coastal region, where flooding may be the main factor. Numerical models modified from Houston (1980) suggest that during a statistical 500- or 100-year tsunami along the Palos Verdes Hills' southern coast, the runup wave would vary from 5 feet to 4 feet, respectively, above the current sea level.

Thus, an oblique right lateral earthquake on the Palos Verdes Fault would be unlikely to cause a large tsunami. With this in mind, for a seismic event on the offshore portion of the Palos Verdes Fault, the maximum magnitude and onshore ground motion should both be lower than for rare ruptures from any unknown offshore California thrust faults.

Submarine landslides are the second most frequent tsunami source worldwide. However, their complex and diverse nature of origin, combined with their infrequent event records, make predictive modelling challenging. More research needs to be conducted to determine how these modeling methods, combined with the probabilistic context, can be used to improve landslide tsunami hazard analysis in the future. In the San Pedro Bay, offshore to the south of the project site, the potential for submarine landslides is high. At this time, the possibility of a submarine landslide-induced tsunami could be a secondary effect of a large onshore or offshore earthquake in the general vicinity.

4.6.3.11 Slope Instability and Seismically Induced Landslides

The project site is located within an area widely known for landslides, which the State of California has zoned as required investigation. When in a zone of investigation, it is probable that the slope or landslide can fail during a moderate to large earthquake, per the California Geological Survey (CGS). Therefore, geotechnical practitioners are required by the State of California to perform a slope stability investigation.

One of the features of the Palos Verdes bentonite, which is contained in the base of the PBL plane, is the ease and rapidity with which colloidal gels are formed when water content is increased. Specifically, change in water content has a great effect on the properties of the Palos Verdes bentonite. Doubling the moisture content decreases the unconfined shear strength more than tenfold.

4.6.3.12 Flood Hazard

A flood is any relatively high streamflow overtopping the natural or artificial banks in any reach of a stream that can inundate an area. Statistically, per region, zones are categorized into 500- and 100-year floodplains. A 500-year floodplain is an area of minimal flood hazard. A 100-year floodplain is an area with a 1 percent annual chance of flooding. Within developed countries, flooding has been controlled and reduced by flood control devices such as storm drains, channelization, construction of levees, and other engineered infrastructure. With these engineered solutions, there is a reduction of inundation from storm flooding so long as the measures are maintained and the flooding is not greater than the capacity of the device.

The project site does not fall within a 100- or a 500-year Federal Emergency Management Agency (FEMA) flood zone.

4.6.3.13 Paleontological Resources

As noted previously, the existing conditions for paleontological resources in the project area were determined through a record search conducted through LACM, the repository for paleontological resource records, in August 2020. In addition, a pedestrian field survey of the project site was conducted to determine if any fossils were present on the surface or in exposures of the subsurface deposits to determine what potential, if any, there was for the preservation of fossils on the project site.

The proposed project site contains soils that consist of Quaternary landslide deposits from the Pleistocene to the Holocene. Localized soils consist primarily of light to medium brown, coarse- to fine-grained sand with sparse clay and moderate surface rocks (0 to 100 centimeters [cm] in size) and inclusions. According to the paleontological survey results, four documented fossil localities are located within the 0.5-mile study area surrounding the project site. One documented fossil locality, LACM VP 416, is located within the project site. While only one of the four documented fossil localities is recorded within the project area, the background research determined that the same fossil-bearing Monterey Formation geologic units underlie much of the project area.

4.6.4 Regulatory Setting

4.6.4.1 Federal Regulations

National Pollution Discharge Elimination System. Regulations applicable to erosion and soils hazards include Stormwater Pollution Prevention Plans (SWPPPs). The SWPPP, prepared in compliance with a National Pollutant Discharge Elimination System (NPDES) Phase I Permit, describes erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, and nonstormwater management controls. Dischargers

are also required to inspect construction sites before and after storms to identify stormwater discharge from construction activity and to identify and implement controls where necessary.

Additionally, the City operates under a Municipal Separate Storm Sewer System (MS4) Permit for Los Angeles County (Order No. R4-2012-0175) under the NPDES. MS4 permits require an aggressive water quality ordinance, specific municipal practices, and the use of best management practices (BMPs) in many development-related activities to further reduce the amount of contaminants in urban runoff. MS4 permits also require local agencies to cooperatively develop a public education campaign to inform people about what they can do to protect water quality.

Earthquake Hazards Reduction Act. In 1977, the United States Congress passed the Earthquake Hazards Reduction Act, which established the National Earthquake Hazards Reduction Program (NEHRP). When NEHRP was first established, the primary purpose of this program was to improve understanding, characterization, and prediction of earthquakes and associated vulnerabilities. However, in recent years, NEHRP has shifted its primary focus to minimizing losses from earthquakes. In order to minimize this risk, NEHRP helps to improve building codes and land use practices, risk reduction through post-earthquake investigations, development of new design and construction techniques, and mitigation. FEMA is the lead agency for NEHRP and, as such, authorizes funding for earthquake preparedness and mitigation programs.

4.6.4.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (1972). Regulations that are applicable to geologic, seismic, and soil hazards include the Alquist-Priolo Earthquake Fault Zoning Act of 1972 and updates (AP Act; Public Resources Code, Section 2621, et seq.), State-published Seismic Hazards Maps, and provisions of the applicable edition of the California Building Code (CBC). The Palos Verdes Fault Zone is a system that runs beneath the Palos Verdes Peninsula and has the potential to trigger a magnitude 7.8 earthquake (*Los Angeles Times* 2022). However, according to the CGS Seismic Hazards Program: Alquist-Priolo Fault Hazard Zones, there are no Alquist-Priolo Earthquake Fault Zones established at or near the proposed project site. Therefore, procedures and regulations recommended by the CGS for investigations conducted in such zones do not specifically apply.

California Building Code (2022). California Code of Regulations (CCR) Title 24, Part 2, the CBC, provides minimum standards for building design in the State. Local codes are permitted to be more restrictive than Title 24 but not less restrictive. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic zoning. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching, as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8).

California Health and Safety Code. Sections 17922 and 17951–17958.7 of the California Health and Safety Code require cities and counties to adopt and enforce the current edition of the CBC, including a grading section. The City enforces these provisions (refer to Title 8 of the City's Municipal Code). Sections of Volume 2 of the CBC specifically apply to select geologic hazards. Chapter 16 of the 2016 CBC addresses requirements for seismic safety. Chapter 18 regulates excavation,

foundations, and retaining walls. Chapter 33 contains specific requirements pertaining to site demolition, excavation, and construction.

Public Resources Code Section 5097.5. Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

General Construction Activity Storm Water Permit. The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ (Construction General Permit), adopted by the State Water Resources Control Board (SWRCB), regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least 1 acre of total land area. The Construction General Permit authorizes the discharge of stormwater to surface waters from construction activities.

The Construction General Permit is required where construction activities will occur over more than 1 acre of land. To obtain coverage under the Construction General Permit, a project applicant must electronically file all permit registration documents with the SWRCB prior to the start of construction.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials. The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

4.6.4.3 Regional Regulations

Los Angeles County National Pollutant Discharge Elimination System Permit. The current MS4 Permit for Los Angeles County (Order No. R4-2012-0175) became effective December 28, 2012. It contains requirements that are necessary to improve efforts to reduce the discharge of pollutants in stormwater runoff to the maximum extent practicable and achieve water quality standards. The MS4 Permit requires that the City develop a Watershed Management Program (WMP) to implement the requirements of the MS4 Permit on a watershed scale that will include customized strategies, control measures, and BMPs. WMPs shall be developed using the Los Angeles RWQCB Watershed Management Areas (WMAs). The City can elect to collaborate with other MS4 permittees on the development of an Enhanced Watershed Management Program (EWMP) that will evaluate the multiple benefits of regional projects and implement regional control measures and BMPs. The WMP or EWMP will include an evaluation of existing water quality conditions, identify water quality priorities within each WMA, select watershed control measures, and incorporate compliance schedules.

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific “priority” project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered “priority” because the Los Angeles RWQCB determined that they have the greatest potential to degrade water quality. The three categories of “priority” projects include the following:

(1) 10 or more home subdivisions; (2) 100,000-square-foot or larger commercial developments; and (3) projects located adjacent to or directly discharging to environmentally sensitive areas.

4.6.4.4 Local Regulations

City of Rancho Palos Verdes Municipal Code. The following City of Rancho Palos Verdes Municipal Code sections are relevant to geology and soils.

- **Chapter 15.12.010, Plumbing Code:** Adopts and enforces the 2022 edition of the California Plumbing Code with amendments, as published by the International Association of Plumbing and Mechanical Officials.
- **Chapter 15.20, New Construction Permits 4.6-11 Issued:** Declares a moratorium on the filing, processing, approval, or issues of building, grading, or other permits; Environmental Assessments; EIRs; Conditional Use Permits; tentative maps; or parcel maps in the area of the city identified as the “landslide moratorium area.” This precludes the filing and preparation of Environmental Assessments, ISs, Negative Declarations or EIRs for the exclusive purpose of determining whether a parcel of land may be excluded from the moratorium.
- **Section 15.38.010, Complete Disclosure of Geological Conditions Required:** Requires the preparation of a geological or geotechnical report to evaluate the effect of any proposed building, grading, and/or construction or the proposed use of a site.
- **Chapter 17.72, Coastal Permits:** Outlines the procedure involved with coastal permits for proposed development within the specific plan district to determine conformity with the City’s Coastal Specific Plan and State regulations.
- **Section 17.76.040, Grading Permit:** Promotes the public health, safety, and general welfare by establishing allowances for grading in instances where a minor grading permit, a major grading permit, or a remedial grading permit is attained. This section also sets provisions for when such grading permits are used.
- **Section 17.76.130, Geologic Investigation Permit:** Requires a geological investigation permit for all investigative trenching, boring, or grading performed mechanically or by hand.
- **Section 17.76.160, Disclosure of Geological conditions:** Establishes information that must be disclosed whenever the preparation of a geological or geotechnical report is required to evaluate the effect of any proposed building, grading, and/or construction or the proposed use of a site.

City of Rancho Palos Verdes General Plan. The City of Rancho Palos Verdes General Plan (2018) The following goals and policies are relevant to geology and soils for the proposed project:

- **Circulation Element**

- **Policy 30:** Discourage the installation or extension of any infrastructure component into any area known to be hazardous unless appropriate liability safeguards (such as geological hazard abatement districts) are in place and adequate mitigation measures are incorporated into the design.
- **Policy 47:** Require that all flood control/natural water source interfaces and systems minimize erosion.

- **Conservation and Open Space Element**

- **Goal 3:** To protect the environment by reducing environmental hazards in the community.
- **Policy 3:** Require any development within the Resource Management Districts of high slopes (RM 3) and dormant landslide area (RM 5) to perform at least one, and preferably two, independent engineering studies concerning the geotechnical, soils, and other stability factors (including seismic considerations) affecting this site following established geological industry standards.
- **Policy 5:** Develop and enforce a grading ordinance with detailed controls and performance standards to ensure both engineering standards and the appropriate topographic treatment of slopes based on recognized site planning and landscape architecture standards.
- **Policy 6:** Prohibit activities that create excessive silt, pollutant runoff, increase canyon-wall erosion, or potential for landslide within Resource Management Districts containing hydrologic factors (RM 6).

- **Safety Element**

- **Goal 1:** Provide for the protection of life and property from both natural and human-made hazards within the community.
- **Goal 4:** Protect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.

4.6.5 Thresholds of Significance

The thresholds for geology and soils impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines* and the City's *Local Guidelines for Implementing the California Environmental Quality Act* (City of Rancho Palos Verdes 2019). The proposed project may be deemed to have a significant impact with respect to geology and soils if it would:

- Threshold 4.6.1:** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
- Threshold 4.6.1.i:** Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of known fault (Refer to Division of Mines and Geological Special Publication 42.).
 - Threshold 4.6.1.ii:** Strong seismic ground shaking.
 - Threshold 4.6.1.iii:** Seismic-related ground failure, including liquefaction.
 - Threshold 4.6.1.iv:** Landslides.
- Threshold 4.6.2:** Result in substantial soil erosion or the loss of topsoil.
- Threshold 4.6.3:** Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.
- Threshold 4.6.4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property.
- Threshold 4.6.5:** Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
- Threshold 4.6.6:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The IS, provided in Appendix A, substantiates that there would be no impacts associated with Threshold 4.6.1.i because the project site is not within an established Alquist-Priolo Earthquake Fault Zone. The nearest fault is the Cabrillo Fault, located more than 1 mile north of the project site (USGS 2020). The Cabrillo Fault is not designated as an Alquist-Priolo fault; therefore, no impacts would occur. According to an article published in the *Los Angeles Times* on September 23, 2022, the Palos Verdes Fault Zone has been determined to contain a system of interconnected, closely spaced planar fractures stretching from the Santa Monica Bay to the waters off Dana Point (*Los Angeles Times* 2022). The Palos Verdes Fault Zone has not been designated as an Alquist-Priolo fault; therefore, the conclusions found in the IS remain valid. The IS substantiates that impacts associated with Threshold 4.6.1.ii would be less than significant because the proposed project would not construct any buildings or structures and therefore would not risk loss, injury, or death from strong seismic ground shaking. The IS substantiates that impacts associated with Threshold 4.6.1.iii would be less than significant because according to the DOC, no portion of the project site is within a liquefaction zone (DOC 2020). Additionally, the proposed project would not construct any buildings or structures and therefore would not increase risk of loss, injury, or death from strong seismic

ground shaking. Finally, the IS substantiates that impacts associated with Threshold 4.6.5 would be less than significant because the project does not propose the installation of, or connection to, a septic system or alternative wastewater disposal system. These thresholds will not be addressed in the following analysis.

4.6.6 Project Impacts

Threshold 4.6.1.iv: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving *landslides*?

Less Than Significant Impact. The PBL, a component of the City's ancient landslide complex, is an ancient landslide mass that shows possible signs of movement as far back as 120,000 to 800,000 years ago (City of Rancho Palos Verdes 2018). Horizontal displacement of over 8.5 feet per year has been measured within the eastern and seaward subslides (City of Rancho Palos Verdes 2018d). As indicated above, the project site consists of approximately 206 acres within the landslide complex. It is probable that the slope or landslide can fail during a moderate to large earthquake, per the CGS. Additionally, one of the features of the Palos Verdes bentonite, which is contained in the base of the PBL plane, is the ease and rapidity with which colloidal gels are formed when water content is increased. Specifically, change in water content has a great effect on the properties of the Palos Verdes bentonite, and doubling the moisture content decreases the unconfined shear strength more than tenfold.

The proposed project would minimize landslide movement in the PBL area by implementing a series of geotechnical engineering solutions to relieve artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. These improvements include the infilling of existing surface fractures, which would minimize direct uncontrolled stormwater infiltration; installing new surface water improvements (such as drainage swales, a flow reduction area, underground pipes, and a system of hydraugers); and refurbishing existing pipes to minimize soil erosion loss and stormwater ponding and infiltration. The objective of implementing these solutions would be to reduce substantial human health risks and improve public safety, reduce the likelihood of major landslide movement that would potentially damage and render Palos Verdes Drive South unusable, and alleviate artesian water pressure below the PBL area, a major contributing factor to landslide movement.

Threshold 4.6.2: Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The project site is currently vacant with vegetation and exposed soil. During grading and construction, soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions due to soil disturbance and the exposure of substantial amounts of soil to weather conditions (e.g., wind, rain). During a storm event, soil erosion could occur at an accelerated rate. The increased erosion potential would result in short-term water quality impacts as identified in Section 4.9, Hydrology and Water Quality.

Because the project would disturb greater than 1 acre of soil, the project is subject to the requirements of the SWRCB's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*

(Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit). The Construction General Permit requires preparation of a SWPPP and implementation of construction BMPs. The construction contractor would be required to prepare and implement the SWPPP and associated BMPs in compliance with the CGP during grading and construction, as outlined in RCM WQ-1, provided in Section 4.9, Hydrology and Water Quality, of this EIR and presented below. Adherence to the BMPs in the SWPPP would reduce, prevent, or minimize soil erosion from future project-related grading and construction activities. Additionally, the preparation and implementation of an Erosion Control Plan, as articulated in RCM WQ-2, would require the project proponent to comply with City grading permit regulations and inspections to reduce sedimentation and erosion.

The majority of the site is within pervious areas where water is anticipated to percolate into the ground, while excess runoff will sheet flow from northeast to southwest, discharging to the Pacific Ocean. As required by RCM WQ-5, a Final Hydrology and Hydraulics Analysis would be required to be prepared and submitted to the City for approval to ensure the peak flow of stormwater runoff in the proposed condition would not exceed the outfall capacity. As a result, any increase in peak discharge would be negligible. Therefore, with compliance with RCM WQ-1, RCM WQ-2, and RCM WQ-5, the proposed project would not result in substantial soil erosion or the loss of topsoil.

Threshold 4.6.3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact. The project site is located on the PBL complex and is therefore susceptible to unstable soils and landslides. It is probable that the landslide can fail during a moderate to large earthquake, per the CGS. As mentioned previously, the Palos Verdes Fault is closest to the proximity of the project site. A maximum probable earthquake on the Palos Verdes Fault could cause extensive damage and slope failures within the PBL from strong motion. Furthermore, one of the features of the Palos Verdes bentonite, which is contained in the base of the PBL plane, is the ease and rapidity with which colloidal gels are formed when water content is increased. Doubling the moisture content decreases the unconfined shear strength more than tenfold, making the potential for destructive landslides higher at the project site. The proposed project would minimize landslide movement in the PBL area by implementing a series of geotechnical engineering solutions to relieve artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. One of the objectives of implementing these solutions would be to reduce the likelihood of major landslide movement that would potentially damage and render Palos Verdes Drive South unusable. Therefore, with implementation of the proposed project, landslides on the project site would be potentially reduced.

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “unconfined” face such as an open body of water, channel, or excavation. In soils, this movement is generally due to failure along a weak plane and may often be associated with liquefaction.

As mentioned previously, because the project site is located in an area that experiences seismicity, subsidence could occur on the PBL during a large earthquake. The withdrawal of water during dewatering of the landslide or adding artificial fill may also be another source of potential subsidence on the landslide. Additionally, removal of the mobile clay along the slide plane of the PBL from possible oversaturation would make the clay flow like liquid beneath portions of the PBL complex. Therefore, the potential for subsidence during a large earthquake or from clay extrusion from the PBL complex exists on the project site.

With regard to liquefaction, the onshore portion of the project site includes landslide materials that consist of a mixture of clay, silt, sand, gravel, and cobbles with boulders. According to the Geotechnical Investigation prepared for the proposed project, beach sands at the toe of the landslide that are saturated with ocean water located between the coarser-grained material could liquefy. If the beach sands liquefy during a seismic event, the coastal bluffs along the landslide toe could become unstable. The onshore portion of the project site includes landslide materials that consist of a mixture of clay, silt, sand, gravel, and cobbles with boulders. However, according to the DOC Seismic Hazards Program: Liquefaction Zones Map, the project site is not located in a liquefaction zone. Therefore, the project site is not located on soils that are liquefiable, and the potential for instability on the project site that would result from liquefaction does not exist.

As mentioned previously, collapsible soils are soil structures subject to a large and sudden reduction in volume upon wetting and are often found in young alluvial deposits within arid or semi-arid environments. Collapsible soil structures contain granular particles with voids supported by a matrix of clay or silt particles or by carbonate cementation. Hydration of the matrix can result in a loss of support, resulting in densification and collapse of the soil structure. Based on the geologic conditions at the project site, the collapse potential for near-surface project site soils is negligible. Therefore, the project site is not located on soils that are collapsible, and the potential for instability on the project site that would result from soil collapse would be less than significant.

Threshold 4.6.4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact. Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. Soils with an expansion index (EI) of greater than 20 are classified as expansive for building purposes and, therefore, have a potentially significant impact.

As mentioned previously, the bentonite clays in the PBL are subject to significant volumetric changes with changes in moisture content. However, since there are no existing or planned structures on the project site, impacts from movement associated with the presence of expansive soil will be negligible, assuming that earthwork will include proper moisture conditioning of the clays where they are encountered. Therefore, there would be no impacts related to expansive soil creating substantial direct or indirect risks to life or property.

Threshold 4.6.6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated. As noted previously, the existing conditions for paleontological resources in the project area were determined through a record search conducted through the LACM in August 2020. In addition, a pedestrian field survey of the project site was conducted to determine if any fossils were present on the surface or in exposures of the subsurface deposits to determine what potential, if any, existed for the preservation of fossils on the project site.

The proposed project site contains soils that consist of Quaternary landslide deposits from the Pleistocene to the Holocene. Localized soils consist primarily of light to medium-brown, coarse- to fine-grained sandstone with sparse clay and moderate surface rocks (0 to 100 cm in size) and inclusions. The sandstone is composed of the Monterey Formation that was broken into angular fragments dominated by small tabular cobbles 2 to 4 inches in diameter. According to the paleontological survey results, four documented fossil localities are within the 0.5-mile study area surrounding the project site. One documented fossil locality, LACM VP 413, is located within the project site. LACM VP 413 is not within or near any proposed design features with associated ground disturbance proposed. Additionally, while only one of the four documented fossil localities is recorded within the project area, the background research determined that the same fossil-bearing Monterey Formation geologic units underlie much of the project area.

Where the ground surface was visible, no fossils were observed. Particular attention was given to the location of Hydrauger A6 due to the presence of a previously documented fossil locality, LACM IP 12611, in the vicinity but just outside the project area boundary. Additionally, the exposed cliff, in conjunction with the previously documented paleontological resource nearby, indicated a higher potential to observe intact fossil-bearing geologic units. Examination of the area did not reveal any fossiliferous Quaternary terrace deposits or any fossil shell fragments. Parts of a slump surface below Inspiration Point are paved over, and no sediments could be observed. The eastern edge of Inspiration Point is now so vertical that no Quaternary deposits could be identified at the surface. The underlying shale deposits of the Monterey Formation appear to be stratiform in the portion of the cliff exposed in this area. No fossils were observed within this formation in the cliff face. Additionally, several small stream cuts were observed during the survey to inspect the exposed subsurface profiles. These observations confirmed the presence of Monterey Formation shale consisting of distorted bedded sequences of gray shales, siltstones, and sandstones that are displaced with chaotic bedding orientations of small, contiguous stratified blocks juxtaposed against one another at an angle of approximately 50 degrees. At one location, the jumbled blocks can be observed to be incised by a jumbled mass of broken angular sandstone and shale clasts resembling a small debris flow. Examination of some of these clasts revealed no vertebrate or invertebrate fossils. Fragmentation of the bedrock greatly reduced the possibility of preservation of fossils during or after the mass wasting activities of the landslide activity.

According to the Paleontological Resources Assessment, based on the limited ground surface visibility, the existence of previously recorded resources within the project area and the surrounding 0.5-mile study area, and the confirmation that fossil-bearing geologic units are present, there remains a potential to encounter previously undocumented paleontological resources. Therefore,

implementation of Mitigation Measures MM PAL-1, MM PAL-2, and MM PAL-3 would reduce potential impacts to unknown paleontological resources to less than significant levels, and no additional mitigation is required.

4.6.7 Level of Significance Prior to Mitigation

The proposed project would result in potentially significant impacts with respect to soil erosion and the destruction of unknown paleontological resources without the implementation of applicable regulatory compliance and mitigation measures.

4.6.8 Regulatory Compliance Measures and Mitigation Measures

4.6.8.1 Regulatory Compliance Measures

The proposed project would comply with the following Regulatory Compliance Measures.

RCM WQ-1 Construction General Permit. Prior to commencement of construction activities, the Project Proponent shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ, or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained for the proposed project from SMARTS and provided to the City of Rancho Palos Verdes (City) Engineer/Public Works Director, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to: preparation of a SWPPP and implementation of construction site Best Management Practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the proposed project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., soil binders, straw mulch, nonvegetative stabilization, fiber rolls, sandbag barriers, straw bale barriers, a stabilized construction entrance/exit, a stabilized construction roadway, and an entrance/outlet tire wash) to control the pollutants in stormwater runoff. Upon completion of construction activities and stabilization of the project site, a Notice of Termination (NOT) shall be submitted via SMARTS.

RCM WQ-2 Preparation of Erosion Control Plan. The Project Proponent shall submit an Erosion Control Plan to the City Engineer/Public Works Director, or designee, for review and approval concurrent with the grading permit application or with submittal of the

grading plans for the proposed project. An approved erosion control plan from the previous year shall be updated and submitted for approval, if necessary, prior to the start of the rainy season each year, as determined by the City Engineer/Public Works Director.

- RCM WQ-5** **Preparation of Final Hydrology and Hydraulic Analyses.** Prior to issuance of a grading permit, the Project Proponent shall submit Final Hydrology and Hydraulic Analyses to the City Engineer/Public Works Director, or designee, and the Los Angeles County Flood Control District for review and approval. The Final Hydrology and Hydraulic Analyses shall be prepared consistent with the requirements of the *Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4* (Los Angeles County MS4 Permit), Order No. R4-2012-0175, NPDES Permit No. CAS004001, as amended by Order Nos. WQ 2015-0075 and R4-2012-0175-A01. The City Engineer/Public Works Director, or designee, shall ensure that the drainage facilities specified in the Final Hydrology and Hydraulic Analyses are incorporated into the final project design.

4.6.8.2 Mitigation Measures

The proposed project is required to implement the following mitigation measures to reduce potential impacts to unknown paleontological resources.

- MM PAL-1** **Paleontological Resources Monitor.** The City of Rancho Palos Verdes (City) shall retain the services of a Qualified Paleontologist meeting the Secretary of the Interior's Standards prior to commencing construction activity and require that all initial ground-disturbing work be monitored by paleontological specialists (Paleontological Resources Monitor) proficient in fossil identification in monitoring contexts.
- MM PAL-2** **Paleontological Mitigation Plan.** Prior to commencing construction activity, the City's qualified Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) outlining procedures for paleontological data recovery for the proposed project and submitted to the City for review and approval. The development and implementation of the PMP shall include consultations with the applicant's engineering geologist as well as a requirement that the curation of all specimens recovered under any scenario shall be conducted through an appropriate repository agreed upon by the City. All specimens become the property of the City unless it chooses otherwise. If the City accepts ownership, the curation location may be revised. The PMP shall include developing a multilevel ranking system, or Potential Fossil Yield Classification (PFYC), as a tool to demonstrate the potential yield of fossils within a given stratigraphic unit. The PMP shall outline the monitoring and salvage protocols to address paleontological resources encountered during ground-disturbing activities as well as the appropriate recording, collection, and processing protocols to appropriately address any resources discovered. The cost of data recovery is limited to the discovery of a reasonable sample of available material. The interpretation of reasonableness rests with the City.

MM PAL-3 Final Paleontological Mitigation Report. At the completion of all ground-disturbing activities, the City's Qualified Paleontologist shall prepare a final paleontological mitigation report summarizing all monitoring efforts and observations, as performed in line with the PMP, and all paleontological resources encountered, if any. The Paleontologist consultant shall also provide follow-up reports of any specific discovery, if necessary.

4.6.9 Level of Significance after Mitigation

The proposed project would result in less than significant impacts with respect to soil erosion and the destruction of unknown paleontological resources following implementation of Mitigation Measures MM PAL-1 through MM PAL-3.

4.6.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for geology and soils.

For geology and soils, the cumulative study area consists of the area that could be affected by the proposed project activities and other areas that are affected by the PBL complex. Specifically, this encompasses the areas under the Rancho Palos Verdes Landslide Moratorium, where construction of new structures or buildings is prohibited unless they meet the criteria for an exception. The analysis above indicated no rare or special geological features or soil types on the project site that would be affected by project activities and no other known activities or projects with activities that affect the geology and soils of this site. In addition, the proposed project, as with all foreseeable projects, would be required to comply with the applicable State and local requirements, including the City of Rancho Palos Verdes Building Code. Compliance with RCM WQ-1, RCM WQ-2, and RCM WQ-5 for the proposed project would ensure that cumulative impacts to geology and soils would be less than significant. Therefore, the project's contribution to cumulative geotechnical and soil impacts is less than cumulatively significant.

For paleontological resources, the cumulative study area is the geographical area of Rancho Palos Verdes, which is the geographical area covered by the City's General Plan, including all goals and policies included therein. Future development in Rancho Palos Verdes could include excavation and grading that could potentially affect paleontological resources. The cumulative effect of the proposed project is the continued loss of these resources. The proposed project, in conjunction with other development in the city, has the potential to cumulatively impact paleontological resources; however, it should be noted that each development proposal received by the City that requires discretionary approval would be required to undergo environmental review pursuant to CEQA. With compliance with MM PAL-1 through MM PAL-3, cumulative impacts to paleontological resources would be less than significant. If subsurface cultural resources are assessed and/or protected as they are discovered, impacts to these resources would be less than cumulatively significant. In addition, the City's General Plan policies would be implemented as appropriate to reduce the effects of additional development within Rancho Palos Verdes. Therefore, the project's contribution to the destruction of known and unknown paleontological resources throughout the city would be less than cumulatively significant.

4.7 GREENHOUSE GAS EMISSIONS

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions associated with the proposed Portuguese Bend Landslide Remediation Project (proposed project). This section summarizes information provided in the *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Portuguese Bend Landslide Remediation Project* (Air Quality, Energy, and GHG Analysis) (Vista 2023) that was prepared for the project. The Air Quality, Energy, and GHG Analysis is included in Appendix B of this Draft Environmental Impact Report (EIR).

4.7.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there are public comments received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Two comment letters included comments related to GHG emissions.

- The letter by Ken Dyda received on January 3, 2021, asks how the GHG emissions that would be generated by the proposed project would compare to current conditions.
- The letter by the South Coast Air Quality Management District (SCAQMD) received on January 7, 2021, requested that the air quality and GHG EIR sections utilize the *CEQA Air Quality Handbook* and website, as well as the California Emission Estimator Model (CalEEMod) software as guidance. SCAQMD also requested that the analysis use criteria pollutant emissions to compare to the SCAQMD's California Environmental Quality Act (CEQA) regional pollutant emissions significance thresholds. If the proposed project would generate diesel emissions, it is recommended that a mobile-source health risk assessment be performed.

4.7.2 Methodology

The Air Quality, Energy, and GHG Analysis (Vista 2022) was prepared for the proposed project. Impacts related to GHG emissions and GCC were assessed in accordance with methodologies recommended by the California Air Resources Board (CARB) and the SCAQMD. GHG emissions are typically measured in terms of pounds or tons of "carbon dioxide equivalents" (CO₂e). The latest version of CalEEMod (v2020.4.0), which was released by the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air quality agencies, was used to determine the construction GHG emissions of the proposed project. There are no operational GHG emissions for the proposed project. Construction of the proposed project is anticipated to start in third or fourth quarter 2023 and is estimated to last until fourth-quarter 2025. Project-related emissions were modeled under the assumption that construction of the proposed project would occur in four components. The construction off-road equipment list (as shown in Table G of the Air Quality and GHG Analysis) is used in CalEEMod to calculate on-site emissions for each construction phase.

4.7.3 Existing Environmental Setting

4.7.3.1 Global Climate Change

GCC is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric¹ temperature of 0.36 degrees Fahrenheit (°F) per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by approximately 0.2°C per decade due to past and ongoing emissions (IPCC 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 2°C to 4°C in the medium emissions scenario and 4°C to 7°C in the high emissions scenario by the end of the century (California Energy Commission 2018). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO₂) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."²

¹ The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

² The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO₂, methane (CH₄), and nitrous oxide (N₂O) in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

4.7.3.2 Primary Greenhouse Gases

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:¹

- CO₂;
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur hexafluoride (SF₆).

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which some scientists believe can cause global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO₂, CH₄, and N₂O), some gases (e.g., HFCs, PFCs, and SF₆) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this analysis, the term “GHGs” will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO₂, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of metric tons² of “CO₂ equivalents” (MT CO₂e). As such, the GWP of CO₂ is equal to 1. The GWP values used in this analysis are based on the 2007 Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, which are used in CARB’s 2014 Scoping Plan Update and the CalEEMod Model Version 2020.4.0. Table 4.7.A identifies the GWP for each GHG analyzed.

The following discussion summarizes the characteristics of the six primary GHGs.

Carbon Dioxide. The natural production and absorption of CO₂ is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal,

¹ The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this memorandum.

² One metric ton is equivalent to approximately 1.1 tons.

oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. CO₂ was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The IPCC indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that the concentration of CO₂ in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of

Table 4.7.A: Global Warming Potential, Atmospheric Lifetimes, and Abundances of GHGs

Pollutant	Atmospheric Lifetime (Years) ¹	Global Warming Potential (100-year) ²	Atmospheric Abundance
Carbon Dioxide (CO ₂)	50–200	1	379 ppm
Methane (CH ₄)	9–15	25	1,774 ppb
Nitrous Oxide (N ₂ O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF ₆)	3,200	22,800	5.6 ppt

Sources: IPCC (2007); United States Environmental Protection Agency (2015).

¹ Defined as the half-life of the gas.

² Compared to the same quantity of CO₂ emissions and based on the IPCC 2007 standard, which is utilized in CalEEMod (Version 2020.4.0), that is used in this report (CalEEMod User Guide, May 2021).

GHG = greenhouse gas

ppm = parts per million

IPCC = Intergovernmental Panel on Climate Change

ppt = parts per trillion

ppb = parts per billion

anthropogenic sources. This could result in an average global temperature rise of at least 2 degrees Celsius (°C) or 3.6°F.

Methane. CH₄ is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH₄ include fires, geologic processes, and bacteria that produce CH₄ in a variety of settings (most notably, wetlands) (USEPA 2022). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO₂, the major removal process of atmospheric CH₄—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH₄ concentrations in the atmosphere are increasing.

Nitrous Oxide. N₂O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural-source emissions. N₂O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N₂O. The quantity of N₂O emitted varies according to the types of fuel, technology, and pollution control devices used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N₂O emissions in the State.

Hydrofluorocarbons. HFCs are synthetic, man-made chemicals used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest GWP. The HFCs with the largest measured atmospheric abundances are (in order): HFC-23 (CHF_3), HFC-134a ($\text{CF}_3\text{CH}_2\text{F}$), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are man-made for applications such as automobile air conditioners and refrigerants.

4.7.3.3 Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

Global Emissions. Worldwide emissions of GHGs in 2017 totaled 25.6 billion MT CO_2e (UNFCCC 2019). Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions. In 2020, the United States emitted approximately 5,222 million MT CO_2e , down 11 percent from 2109. This decrease was primarily due to a 13 percent decrease in transportation emissions driven by decreased demand due to the ongoing COVID-19 pandemic. Electric power-sector emissions also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon-intensive natural gas and renewables. GHG emissions in 2020 (after accounting for sequestration from the land sector) were 21 percent below 2005 levels (USEPA 2022).

State of California Emissions. According to CARB emission inventory estimates, the State emitted approximately 380 million metric tons of CO_2e (MMT CO_2e) emissions in 2021 (CARB 2022). This is an increase of approximately 17 MMT of CO_2e from 2020, which may be caused by increased demand for transportation emissions after the COVID-19 pandemic.

Existing Project Site Emissions. The project site is currently undeveloped and vacant. There are no current emissions associated with the undeveloped site.

4.7.4 Regulatory Setting

4.7.4.1 International Regulations

Kyoto Protocol. In 1988, the United Nations established the IPCC to evaluate the impacts of GCC and to develop strategies that nations could implement to curtail GCC. In 1992, the United States joined other countries around the world in signing the UNFCCC agreement, with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, with an objective of reducing their collective GHG emissions by 5 percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182

countries but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012, and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force.

Paris Agreement. The parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2°C compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations, with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order (EO) on September 3, 2016. On June 1, 2017, President Trump announced that the United States was withdrawing from the Paris Agreement, and on January 21, 2021, President Biden signed an EO rejoining the Paris Agreement.

Montreal Protocol. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

4.7.4.2 Federal Regulations

GHG Endangerment. In *Massachusetts vs. Environmental Protection Agency*, 549 U.S. 497, which was decided on April 2, 2007, the United States Supreme Court found that four GHGs, including CO₂, are air pollutants subject to regulation under Section 202(a)(1) of the federal Clean Air Act (CAA). The Court held that the USEPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (i.e., CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section titled “Clean Vehicles” below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling that upheld the USEPA Administrator’s findings.

4.7.4.3 State Regulations

Assembly Bill 32. In 2006, the California State Legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap to be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost-effective.

In 2007, CARB released the calculated year 1990 GHG emissions of 431 MMT CO₂e. The 2020 target of 431 MMT CO₂e requires the reduction of 78 MMT CO₂e, or approximately 16 percent from the State's projected 2020 business-as-usual emissions of 509 MMTCO₂e (CARB 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 MT CO₂ in a calendar year to submit verification of GHG emissions by December 1, 2010. CARB also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations, and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan, adopted in 2009, proposes a variety of measures, including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap-and-Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Assembly Bill 341 and Senate Bills 939 and 1374. Senate Bill (SB) 939 requires that each jurisdiction in California divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling, or other means. SB 1374 requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency, to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. AB 341 was adopted in 2011. It builds upon the waste reduction measures of SB 939 and 1374, and set a new target of a 75 percent reduction in solid waste generated by the year 2020.

Assembly Bill 1493. California AB 1493 (also known as the Pavley Bill, in reference to its author, Fran Pavley) was enacted on July 22, 2002, and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. In 2004, CARB approved the "Pavley I" regulations, limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 and 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the United States Environmental Protection Agency (USEPA) granted California the authority to implement GHG emission reduction standards for light-duty vehicles. In September 2009, amendments to the Pavley

I regulations were adopted by CARB, and implementation of the “Pavley I” regulations started in 2009.

The second set of regulations, “Pavley II,” was developed in 2010 and is being phased in between model years 2017 through 2025, with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars and promote zero-emissions auto technologies such as electricity and hydrogen. They also increase the infrastructure for fueling hydrogen vehicles. In 2009, the USEPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport utility vehicles. These GHG emissions standards are currently being implemented nationwide.

The USEPA has performed a midterm evaluation of the longer-term standards for model years 2022–2025. Based on the findings of this midterm evaluation, the USEPA proposed the Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021–2026 (SAFE Vehicles Rule), which amends the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The SAFE Vehicles Rule was published on April 30, 2020, and made effective on June 29, 2020.

CARB Scoping Plan. The CARB 2008 Scoping Plan contains measures designed to reduce the State’s emissions to 1990 levels by the year 2020 to comply with AB 32. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target, with each sector having a different emission reduction target. Most of the measures target the transportation and electricity sectors.

In November 2017, CARB released the final 2017 Scoping Plan Update, which identifies the State’s post-2020 reduction strategy. The 2017 Scoping Plan Update reflects the 2030 target of a 40 percent reduction below 1990 levels, set by EO B-30-15 and codified by SB 32. Key programs that the Scoping Plan Update builds upon include the cap-and-trade regulation, the Low Carbon Fuel Standard (LCFS), and much cleaner cars, trucks, and freight movement utilizing cleaner, renewable energy and strategies to reduce CH₄ emissions from agricultural and other wastes. The 2017 Scoping Plan establishes a new emissions limit of 260 MMT CO₂e for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.

Senate Bill 32 and Assembly Bill 197. On September 8, 2016, former Governor Brown signed SB 32 and its companion bill, AB 197. SB 32 requires the State to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030, a reduction target that was first introduced in EO B-30-15. The new legislation builds upon the AB 32 goal of 1990 levels by 2020 and provides an intermediate goal to achieving EO S-3-05, which sets a statewide GHG reduction target of 80 percent below 1990 levels by 2050. AB 197 created a legislative committee to oversee regulators to ensure that CARB not only responds to the Governor, but to the Legislature as well.

Senate Bill 97. SB 97 was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor’s

Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the *State CEQA Guidelines* that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the *State CEQA Guidelines* and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided, and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate Action Plans and other GHG reduction plans can be used to determine whether a project has significant impacts based on its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with State, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing *CEQA Guidelines*, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the *State CEQA Guidelines*.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- EIRs must specifically consider a project’s energy use and energy efficiency potential.

Senate Bill 375—Sustainable Communities and Climate Protection Act of 2008. Passing the Senate on August 30, 2008, SB 375 was signed by former Governor Brown on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions and emits over 40 percent of the total GHG emissions in California. SB 375 states, “Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32.” SB 375 does the

following: (1) requires Metropolitan Planning Organizations (MPOs) to include sustainable community strategies in their Regional Transportation Plans (RTPs) for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for implementation of the strategies.

Executive Order N-79-20. Governor Newsom issued EO N-79-20 on September 23, 2020. This EO requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emission by 2035 and all medium- and heavy-duty vehicles (commercial trucks) sold in the State to be zero-emission by 2045 for all operations where feasible. EO N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035.

Executive Order B-29-15. The California Governor issued EO B-29-15 on April 1, 2015, directing the State Water Resources Control Board to impose restrictions to achieve a statewide 25 percent reduction in urban water usage and directing the Department of Water Resources to replace 50 million square feet of lawn with drought-tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The ordinance also requires installation of more efficient irrigation systems, requires promotion of greywater usage and on-site stormwater capture, limits the turf planted in new residential landscapes to 25 percent of the total area, and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. EO B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Executive Order B-48-18 and Assembly Bill 2127. The California Governor issued EO B-48-18 on January 26, 2018. This EO orders all State entities to work with the private sector to put at least 5 million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently, there are approximately 350,000 electric vehicles operating in California, which represents approximately 1.5 percent of the 24 million vehicles total currently operating in California. Implementation of EO B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. AB 2127 was codified into statute on September 13, 2018, and requires that the California Energy Commission, working with CARB, prepare biannual assessments of the statewide electric vehicle charging infrastructure needed to support the levels of zero-emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

In 2009, CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but it has been in effect since 2011 and was re-approved by CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT CO₂e per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower-carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered low-carbon fuels.

Executive Order S-1-07. EO S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least 10 percent by 2020. This EO also directs CARB to determine whether this LCFS could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05. Former Governor Arnold Schwarzenegger announced on June 1, 2005, through EO S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the EO, the secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs. The State achieved its first goal of reducing GHG emissions to 2000 levels by 2010.

Executive Order B-30-15. Issued by the California Governor on April 29, 2015, EO B-30-15 aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This EO aligns California's GHG reduction targets with those of other international governments, such as the European Union, which set the same target for 2030 in October 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050, which is based on scientifically established levels needed in the United States to limit global warming below 2°C—the warming threshold at which scientists say there will likely be major climate disruptions, such as super droughts and rising sea levels. AB 197 (September 8, 2016) and SB 32 (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-55-18 and Senate Bill 100. SB 100 and EO B-55-18 were signed by former Governor Brown on September 10, 2018. Under the existing Renewables Portfolio Standard, 25 percent of retail sales are required to be from renewable sources by December 31, 2016; 33 percent by December 31, 2020; 40 percent by December 31, 2024; 45 percent by December 31, 2027; and 50 percent by December 31, 2030. SB 100 raises California's Renewables Portfolio Standard requirement to a 50 percent renewable resources target by December 31, 2026, and a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use

customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. In addition to targets under AB 32 and SB 32, EO B-55-18 establishes a carbon neutrality goal for the State of California by 2045 and sets a goal to maintain net negative emissions thereafter. EO B-55-18 directs the California Natural Resources Agency, Cal/EPA, the Department of Food and Agriculture, and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan, consistent with the carbon neutrality goal.

4.7.4.4 Regional Regulations

South Coast Air Quality Management District. The proposed project is located within the jurisdiction of the SCAQMD. In order to identify significance criteria under CEQA for development projects, in 2008, SCAQMD adopted a 10,000 MT CO₂e annual threshold for industrial projects where SCAQMD is the lead agency. It should be noted that SCAQMD's industrial threshold was prepared prior to the issuance of EO B-30-15 on April 29, 2015, that provided a reduction goal of 40 percent below 1990 levels by 2030. This target was codified into statute through passage of AB 197 and SB 32 in September 2016. However, to date, no air district or local agency in California has provided guidance on how to address AB 197 and SB 32 with relation to land use projects. In addition, the California Supreme Court's ruling on *Cleveland National Forest Foundation v. San Diego Association of Governments (Cleveland v. SANDAG)*, filed July 13, 2017, stated:

SANDAG did not abuse its discretion in declining to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal. In its response to comments, the EIR said: "It is uncertain what role regional land use and transportation strategies can or should play in achieving the EO's 2050 emissions reduction target. A recent California Energy Commission report concludes, however, that the primary strategies to achieve this target should be major 'decarbonization' of electricity supplies and fuels, and major improvements in energy efficiency [citation]."

Although, the above court case was referencing California's GHG emission targets for the year 2050, at this time, it is also unclear what role land use strategies can or should play in achieving the AB 197 and SB 32 reduction goal of 40 percent below 1990 levels by 2030. As such, this analysis has relied on the SCAQMD GHG emissions threshold for industrial projects. Because the lead agency for this project is not SCAQMD, but rather the City of Rancho Palos Verdes, the appropriate annual GHG emissions threshold is 3,000 MT CO₂e. [

Regional Comprehensive Plan. In 2008, SCAG adopted the Regional Comprehensive Plan (RCP) for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches; and (2) outlining key roles for public- and private-sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to

policy and planning decisions, these policies are considered recommendations and are not mandated by law.

4.7.4.5 Local Regulations

City's General Plan. The City's General Plan Safety Element describes the effects of GHG emissions and outlines GHG mitigation as it pertains to the City. The following policy is related to GHG emissions:

- **Policy 35:** Implement policies and programs identified in the City's Emissions Reduction Action Plan (ERAP) in order to improve air quality in the City.

Emissions Reduction Action Plan. The City has started implementing new reduction measures and continues to augment existing efforts as outlined in its ERAP to meet the State-aligned target. The City certified Resolution No. 2017-68 and adopted the ERAP on December 19, 2017. The ERAP serves as a guide for action by setting GHG emissions reduction goals and establishing strategies and policy to achieve desired outcomes over the next 20 years. It identifies communitywide strategies to lower GHG emissions from a range of sources within the jurisdiction, including transportation, land use, energy generation and consumption, water, and waste.

4.7.5 Thresholds of Significance

The thresholds for GHG emissions impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to greenhouse gas emissions if it would:

Threshold 4.7.1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

Threshold 4.7.2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases.

As stated above, for the purpose of this analysis, a draft threshold of 3,000 metric tons of CO₂e per year (MT CO₂e/yr) was used for the proposed project.

4.7.6 Project Impacts

Threshold 4.7.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Since the proposed project is limited to landslide remediation activities, which are considered construction activity types, minimal operational emissions associated with operation, inspection and maintenance would be created from the proposed project. The hydrauger operation, including filling of the tanks and tank discharge, will be gravity fed and discharged. Emergency pumps on the project site would be gasoline powered tanks. The emergency pumps would be operated on an as-needed basis only and, consequently, would contribute a negligible amount of GHG emissions. Vehicle trips associated with the operation, inspection, and maintenance of the project components would be conducted on a-limited as-

needed basis, and are also not expected to result in a substantial increase in daily trips or operational emissions. As such, the generation of GHG emissions has been limited to construction emissions. A summary of the construction-related GHG emissions created by the proposed project is shown below in Table 4.7.B and the CalEEMod model run provided in Appendix D of the Air Quality, Energy, and GHG Analysis.

Table 4.7.B: Construction-Related Greenhouse Gas Annual Emissions

Construction Year	Greenhouse Gas Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2023	468.09	0.07	0.04	482.43
2024	370.56	0.04	0.04	382.56
2025	404.80	0.04	0.04	416.58
Total Construction GHG Emissions	1,243.46	0.15	0.11	1,281.56
Total Construction GHG Emissions Amortized over 30 years¹				42.72
SCAQMD Threshold of Significance				3,000

Source: CalEEMod Version 2020.4.0.

¹ Construction emissions amortized over 30 years as recommended by the SCAQMD GHG Working Group on November 19, 2009.

CalEEMod = California Emission Estimator Model

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

MT/yr = metric tons per year

N₂O = nitrous oxide

The data provided in Table 4.7.B show that construction of the proposed project would create a total 1,281.56 MT CO₂e, or 42.72 MT CO₂e/yr when amortized over a 30-year period. According to the SCAQMD threshold of significance, as detailed above in Section 4.7.4.4, a cumulative GCC impact would occur if the proposed project’s GHG emissions would exceed 3,000 MT CO₂e/yr. Therefore, a less than significant generation of GHG emissions would occur from implementation of the proposed project. Impacts would be less than significant, and no mitigation is necessary.

Threshold 4.7.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases?

Less Than Significant Impact. The proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. The proposed project is limited to landslide remediation activities and would not result in the creation of any long-term GHG emissions. It should also be noted that the proposed project does not include development of any structures and would not result in any permanent population or employment growth in the city.

As detailed above in the response to Threshold 4.7.1, the proposed project is anticipated to create 42.72 MT CO₂e/yr, which is well below the threshold of significance of 3,000 MT CO₂e/yr. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHGs.

4.7.7 Level of Significance Prior to Mitigation

There would be no potentially significant impacts related to GHG emissions.

4.7.8 Regulatory Compliance Measures and Mitigation Measures

4.7.8.1 Regulatory Compliance Measures

No regulatory compliance measures are required for the proposed project.

4.7.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.7.9 Level of Significance after Mitigation

The proposed project would result in less than significant impacts with respect to GHG emissions, and there would be no significant unavoidable adverse impacts of the proposed project.

4.7.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for GHG emissions. GHG emissions are global pollutants, and therefore, result in cumulative impacts by nature. Consequently, it is speculative to determine how an individual project's GHG emissions would impact California. As such, impacts identified under Section 4.7.6, Project Impacts, are not project-specific impacts to GCC, but are the proposed project's contribution to this cumulative impact. The impact of project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to GCC. Additionally, the proposed project, in conjunction with other cumulative projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. Therefore, the project's cumulative contribution of GHG emissions would be less than significant and the project's cumulative GHG impacts would also be less than cumulatively considerable.

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4.8 HAZARDS AND HAZARDOUS MATERIALS

This section addresses potential hazards and hazardous material impacts at the project site and in the surrounding area that may result from implementation of the proposed Portuguese Bend Landslide Remediation Project (proposed project). Pertinent information and findings from the following reports are summarized in this section:

- *Geological, Geotechnical, and Hydrogeological Review* (Haley & Aldrich 2023)
- *ASTM Phase I Environmental Site Assessment Portuguese Bend Landslide Remediation Project* (Haley & Aldrich 2020) (Phase I ESA)
- *Phase I Environmental Site Assessment Update Portuguese Bend Landslide Remediation Project* (Haley & Aldrich 2022) (Phase I ESA Update)

The complete reports are included in Appendices E and J.

4.8.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there were notes generated from the scoping session. For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Eight of the comment letters included comments related to hazards and hazardous materials:

- The comment raised by Sunshine received on December 8, 2020, expressed the need to address hazard mitigations and wildfire management for nearby residents.
- The comment by Ken Dyda received on January 3, 2021, inquired about the potential of construction activities causing disruptions to evacuation routes.
- The comment by the California Native Plant Society received on January 11, 2021, raised concerns regarding release of toxins into the soil and water that could cause impacts to habitats during project construction.
- Five comment letters received by individuals from the general public raised concerns regarding disruptions to existing trails in the area that should be maintained for disaster evacuation, firefighting access, and other emergency preparedness concerns.

4.8.2 Methodology

The analysis in this section indicates whether potential hazards or hazardous materials impacts are present due to past or present use of the project site and/or properties in the immediate vicinity of the project site. This section analyzes the potential impacts of the proposed project as compared to existing conditions based on the setting described in the ASTM Phase I ESA and Phase I ESA Update (Haley & Aldrich 2020, 2022). This section also analyzes the potential impacts of the proposed project related to emergency response plans and evacuation plans.

4.8.3 Existing Environmental Setting

In 2020, Haley & Aldrich prepared a Phase I ESA covering the project area. In 2022, Haley & Aldrich prepared a Phase I ESA Update that incorporates changes to the project boundaries, as shown on Figure 3-1. While most of the current project boundary lies within the area that was included in the Phase I ESA, there is an eastern appendage that extends along the south side of Palos Verdes Drive South that was not part of the original project that is included in the Phase I ESA Update. This eastern appendage includes the proposed construction access route located on Yacht Harbor Road. In addition, the current project boundary is smaller and lies within the original project boundary considered in the Phase I ESA.

4.8.3.1 Hazardous Materials

No off-site sources of environmental concern were identified. The project area was not identified in the site-specific environmental database report included within the Phase I ESA and Phase I ESA Update. No vapor migration conditions were identified in the site-specific database report and/or other reasonably ascertainable records. No Recognized Environmental Conditions (RECs) or historical RECs were identified in connection with the proposed project area.

The following Controlled Recognized Environmental Condition (CREC) listed below was identified in connection with the proposed project area:

- **CREC #1: Historical Underground Storage Tank:** One 1,000-gallon underground gasoline tank was part of the military Palos Verdes WHF Control Center. The tank was removed, and the case was closed by the Los Angeles Water Quality Control Board (LARWQCB) on December 3, 1996.

De minimis conditions were not identified in connection with the proposed project area.

4.8.3.2 Hazards

Since 1956, the PBL has moved at various rates and has become one of the largest continuously active landslides in the United States. Horizontal displacement of over 8.5 feet per year has been measured within the eastern and seaward subslides (City of Rancho Palos Verdes 2018e). The continued land movement has resulted in significant damage to homes, moving some of them by hundreds of feet onto other properties. It has also resulted in damage to utilities and roadways, including Palos Verdes Drive South, a major transportation route, and to a sanitary sewer trunk line serving tens of thousands of residents of the Palos Verdes Peninsula.

Sudden and major land movement, which has previously occurred in nearby landslides, has the potential to cause a roadway closure on Palos Verdes Drive South due to roadway failure. Closing Palos Verdes Drive South would bifurcate Rancho Palos Verdes, eliminating a major connector and causing a detour of over 15 miles. This would impede evacuations in the event of a wildfire (Palos Verdes Drive South is one of only a few evacuation routes for the entire very high-risk Palos Verdes Peninsula). Equally critical is the potential interruption of the sanitary sewer transmission main line, which could force the relocation of tens of thousands of residents from their homes and could adversely impact the local economy with the closure of businesses while repairs are being made. Damage to the sewer main also poses a serious threat to the sensitive Pacific Ocean shoreline

ecosystem, including the Abalone Cove Park and Reserve, from uncontrolled discharge of untreated sewage.

4.8.4 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many State and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste as well as the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The Federal Emergency Management Agency (FEMA) is the primary federal agency involved with addressing hazards and emergency response, although the United States Bureau of Reclamation and the United States Army Corps of Engineers (USACE) also have programs related to monitoring and maintaining the safety of dams. The Governor's Office of Emergency Services (Cal OES) is the primary State agency related to emergency response and established and updates the Standardized Emergency Management System (SEMS) as needed in accordance with the California Emergency Services Act for emergency response and evacuation. SEMS facilitates response prioritization, interagency cooperation, and the efficient flow of resources and information.

SEMS incorporates the following:

- Incident Command System (field-level emergency response system)
- Interagency coordination for allocation of resources
- Mutual aid (providing emergency resources from non-affected jurisdictions)
- Operational Area Concept (coordination of damage information, resource requests, and emergency response within the affected area)

Local agencies involved in emergency response and evacuation include the County of Los Angeles Emergency Management Department, the Los Angeles County Sheriff's Department, the Los Angeles County Fire Department (LACOFD), and the Los Angeles County Emergency Medical Services (EMS) Agency.

4.8.4.1 Federal Regulations

There are several federal laws regulating hazardous materials and emergency management. Federal laws and regulations potentially applicable to the project site are listed below.

- The purpose of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (42 United States Code [USC] Section 9601 et seq.), often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised.
- The Resource Conservation and Recovery Act of 1976 (RCRA) (42 USC Section 6901 et seq.) provides for "cradle-to-grave" regulation of hazardous waste generated by operating entities.

- The Clean Air Act (CAA) (42 USC Section 7401 et seq.) protects the public from exposure to airborne contaminants known to be hazardous to human health. Under the CAA, the United States Environmental Protection Agency (USEPA) established National Emissions Standards for Hazardous Air Pollutants.
- The Clean Water Act National Pollutant Discharge Elimination System (Section 402[p]) (33 USC Section 1342[p]) regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.
- The Safe Drinking Water Act (42 USC Section 300(f) et seq.) regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality.
- The Toxic Substances Control Act (15 USC Section 2601 et seq.) regulates manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.
- The Federal Insecticide, Fungicide, and Rodenticide Act (7 USC Section 136 and 40 Code of Federal Regulations [CFR] Parts 152–171) regulates the manufacturing, distribution, sale, and use of pesticides.
- The Hazardous Materials Transportation Act (49 USC Section 5101 et seq. and 49 CFR Parts 101, 106, 107, and 171–180) regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.
- The Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101-615) regulates the safe transport of hazardous materials intrastate, interstate, and for foreign commerce.
- The Emergency Planning and Community Right to Know Act (42 USC Section 11001 et seq. and 40 CFR Parts 350.1 et seq.) regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials.
- The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (Public Law 93-288 and 42 U.S.C. 5133), passed in 1988, provides the legal authority for the federal government to provide assistance to states during declared major disasters and emergencies. The Stafford Act, itself an amendment to the Disaster Relief Act of 1974, authorizes the delivery of federal technical, financial, logistical, and other assistance to states and localities during declared major disasters or emergencies. Relevant amendments to the Stafford Act include the Disaster Mitigation Act of 2000 (Public Law 106–390), which authorized a program for pre-disaster mitigation, and the Disaster Recovery Reform Act of 2018, which expanded the definition of management costs to include direct and indirect administrative expenses and required FEMA to reimburse Hazard Mitigation Grant Program management costs.

4.8.4.2 State Regulations

The State of California has established many laws and regulations that expand on federal laws and provide a framework for hazard mitigation and emergency response planning. State laws and regulations potentially applicable to the project site are listed below.

- California Public Resources Code (PRC) Section 21151.4 requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of a project about potential effects on the school if the project might reasonably be anticipated to emit hazardous air emissions or require handling of an extremely hazardous substance or a mixture containing an extremely hazardous substance.
- The Porter-Cologne Water Quality Control Act (California Water Quality Code Section 13000 et seq.) regulates water quality through the State Water Resources Control Board and the Regional Water Quality Control Boards, including oversight of water monitoring and contamination cleanup and abatement.
- The Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code Section 25500 et seq.) requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.
- The Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.) regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.
- The Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code Section 25249.5 et seq.) regulates the discharge of contaminants to groundwater.
- The Cortese List Statute (California Government Code Section 65962.5) requires the Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites throughout the State and includes the Hazardous Waste and Substances Sites List.
- The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (CalEPA 2012) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The California Environmental Protection Agency (CalEPA) and other State agencies set the standards for their programs, while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPAs).
- The State of California Division of Oil, Gas, and Geothermal Resources Regulatory Program (DOGGR) supervises the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells throughout the State. The regulatory program set forth by DOGGR for the management of these resources emphasizes the appropriate development of oil, natural gas, and geothermal resources in the State through sound engineering practices that protect the environment, prevent pollution, and ensure public safety.

- The California Emergency Services Act (California Government Code Section 8550-8668) provides the basic authority for conducting emergency operations following a proclamation of emergency by the governor and/or appropriate local authorities. Local government and district emergency plans are considered extensions of the California Emergency Plan, established in accordance with the Emergency Services Act. California Government Code Section 8589.5 established the Dam Safety Program run by Cal OES (formerly known as the California Emergency Management Agency), which collects and reviews dam failure inundation maps and evaluates waivers from the inundation mapping requirement. It is also the designated repository of the official dam failure inundation maps.
- The California State Hazard Mitigation Plan (SHMP) represents the State's primary hazard mitigation guidance document, providing an updated analysis of the State's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the State's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. SHMPs are required to meet the elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016). Upon approval, the SHMP is adopted by the State for implementation for the next 5 years.

4.8.4.3 Regional Regulations

County of Los Angeles All-Hazards Mitigation Plan (2020). This plan is an effort undertaken by the County to mitigate the effects of natural hazards and plan for resiliency in the future in a way that respects the character and needs of the people who live and work in Los Angeles County.

4.8.4.4 Local Regulations

The following plans and regulations are applicable specifically to the proposed project.

City of Rancho Palos Verdes General Plan. The Safety Element of the City of Rancho Palos Verdes General Plan (City of Rancho Palos Verdes 2018) discusses hazards in the city and identifies policies and goals that aim to reduce human and structural risks due to such events. The following policies would be applicable to the proposed project:

- **Goal 1.1:** Provide for the protection of life and property from both natural and human-made hazards within the community.
- **Goal 1.3:** Develop and enforce health and sanitation requirements and develop emergency communications and disaster preparedness programs to ensure the overall health and safety of all residents.
- **Policy 1.1:** Promote education and safety awareness pertaining to all hazards that affect Rancho Palos Verdes residents and adjacent communities.

- **Policy 1.2:** Adopt and enforce building and fire codes, ordinances, and regulations using best practices that include design and construction standards based upon appropriate levels of risk and hazard.
- **Policy 1.3:** Continue to require that all structures and facilities in the City adhere to City, State, and National regulatory standards such as the California Building and Fire Codes and other applicable fire safety standards.
- **Policy 1.4:** Coordinate with the Los Angeles County Fire Department's Prevention Services to ensure that proper defensible space and an adequate fuel modification program is actively being implemented and enforced on properties within the Very High Fire Hazard Severity Zone.
- **Policy 1.6:** Encourage cooperation among adjacent communities to ensure law enforcement and fire protection mutual aid in emergency situations.
- **Policy 1.9:** Develop and implement stringent site design and maintenance criteria for areas of high fire hazard potential in coordination with fire protection agencies.
- **Policy 1.12:** Coordinate with local, state, and federal agencies to update emergency, evacuation, and hazard mitigation plans, as necessary.
- **Policy 1.15:** Ensure that adequate emergency treatment and transportation facilities are available to all areas of the City.
- **Policy 1.17:** Ensure the availability of paramedic rescue and fire suppression services to all areas of the City.
- **Policy 1.18:** Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan to cope with major disasters.
- **Policy 1.27:** Establish cooperative working relationships among public agencies with responsibility for flood, fire, and climate change protection.

Multi-Jurisdictional Hazard Mitigation Plan. The 2020 Multi-Jurisdictional Hazard Mitigation Plan for the Cities of Rancho Palos Verdes and Rolling Hills Estates (City of Rancho Palos Verdes and City of Rolling Hills Estates 2020) identifies ways to minimize damage by natural and human-caused disasters and ensures continuing eligibility for Hazard Mitigation Grant Program funding. This plan is designed to reduce the loss of life and property, human suffering, economic disruption, and disaster costs; prioritize hazard mitigation at the local level with increased emphasis and planning and public involvement, assessment of risks, implementation of loss reduction measures, and ensuring availability of critical facilities/services to survive a disaster; and promote education and economic incentives to form community-based partnerships and leverage nonfederal resources to commit to and implement long-term hazard mitigation activities.

City of Rancho Palos Verdes Municipal Code. Chapter 8.12, Hazards, of the City of Rancho Palos Verdes Municipal Code (City of Rancho Palos Verdes 2022) adopts Ordinance No. 5307 of the

County, the general hazards ordinance of the County, as amended and in effect on September 7, 1973, as the general hazards ordinance of the City.

City of Rolling Hills Hazard Mitigation Plan. The 2019 Hazard Mitigation Plan for the City of Rolling Hills (City of Rolling Hills 2019) includes resources and information to assist the city, its residents, public- and private-sector organizations, and others interested in participating in planning for hazard events. This plan provides a list of activities that may assist the City of Rolling Hills in reducing risk and preventing loss from future hazard events. Additionally, the plan identifies action items that address multi-hazard issues, as well as activities specifically for reducing risk and preventing losses relating to earthquake, land movement, wildfire, and drought.

4.8.5 Thresholds of Significance

The thresholds for hazards and hazardous materials impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to hazards and hazardous materials if it would:

- Threshold 4.8.1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;**
- Threshold 4.8.2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;**
- Threshold 4.8.3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;**
- Threshold 4.8.4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;**
- Threshold 4.8.5: Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;**
- Threshold 4.8.6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or**
- Threshold 4.8.7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.**

The IS, included as Appendix A, substantiates that there would be no impacts associated with Threshold 4.8.3, as no schools are located within 0.25 mile of the project, and Threshold 4.8.5, as the project is not within an airport land use plan or within 2 miles of an airport. These thresholds will not be addressed in the following analysis.

4.8.6 Project Impacts

Threshold 4.8.1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant.

Construction. Construction activities would be temporary in nature and would use hazardous materials typical of construction (i.e., fuel and lubricants for construction equipment, and paving materials for road construction). These hazardous materials would potentially include gasoline, diesel fuel, lubricants, solvents, and other standard materials used for construction activities. These materials are not classified as acutely hazardous, and the transport, use, and disposal of construction-related hazardous materials would comply with applicable laws and regulations such as those established by the California Department of Toxic Substances Control, USEPA, Occupational Safety and Health Administration, LACOFD, and Los Angeles County Health Department. In addition to routine use, all applicable regulations related to spills and accidents would be implemented to avoid accidental release of toxins into the soil and water resources. Therefore, impacts related to a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials would be *less than significant*. No mitigation is required.

Operation. Operation of the project components would generally not require the routine use of hazardous materials after construction is complete. The types of materials used for surface facture infilling (i.e., bentonite chips) would be nonhazardous. The hydraugers would all be underground facilities that would not require hazardous materials during daily operations but may require limited use of hazardous materials, such as fuels or lubricants, during routine maintenance or repair activities. The new tanks would also not require the use of hazardous materials except in the event of an emergency or occasionally during routine maintenance or repairs, for which oils, solvents, and paints could be used. These hazardous materials products are generally used in small, localized amounts and would be consumed by use and with adherence to warning labels and storage recommendations from the individual manufacturers. All operational activities would occur in compliance with federal, State, and local regulations. Therefore, operation of the project would not create a significant hazard to the public or the environment through the use, storage, or transport of hazardous materials, and the impact would be *less than significant*. No mitigation is required.

Threshold 4.8.2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant.

Construction. Construction activities for the proposed project would involve the limited transport, storage, use, or disposal of hazardous materials, such as fuel for construction equipment and materials for road construction. These types of materials, however, are not acutely hazardous, and all storage, handling, and disposal of these materials would comply with

existing regulations. Compliance with regulations would ensure a ***less than significant impact*** related to creating a significant hazard to the public through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment with regard to construction of the proposed project. No mitigation is required.

Operation. Operation of the proposed project will require periodic maintenance. Routine maintenance and inspections would be unlikely to require ground disturbance, but if ground disturbance were required, it would be only in previously disturbed areas. Use of any hazardous materials during maintenance would be in small quantities and in compliance with federal, State, and local regulations. These regulations include best management practices that would reduce any discharge of pollutants into the environment. Further, the project will implement an Operations and Maintenance Plan that will include procedures for inspection of each of the project components on a regular basis. For these reasons, impacts would be ***less than significant***. No mitigation is required.

Threshold 4.8.4: **Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

Less Than Significant Impact. The Phase I ESA and Phase I ESA Update conducted by Haley & Aldrich included a search of various governmental databases providing lists of hazardous materials sites. The site-specific environmental database report was reviewed to evaluate if soil and or groundwater from on-site and/or off-site sources of concern has the potential to impact the proposed project area. The project site was not identified in the site-specific environmental database report. One CREC, known as Tucker's Property, was identified in connection with the proposed project area. Tucker's Property is located at 96 Narcissa Drive, adjacent to the project site, and is listed in several databases. The site contained a former 1,000-gallon gasoline underground storage tank, and a release of gasoline reportedly impacted soil only. The underground storage tank was reportedly removed, and the case was closed on December 3, 1996. Based on the nature of this listing, the property does not present an REC to the proposed project. Because the surrounding site listings do not present an REC for the proposed project, there would not be a significant hazard to the public or the environment during construction or operation of the proposed project, and impacts would be ***less than significant***. No mitigation is required.

Threshold 4.8.6: **Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact.

Construction. As noted in Section 4.13, Transportation, immediate access to the construction site is provided via Palos Verdes Drive South. Four study intersections were selected for the project's traffic analysis in order to determine potential traffic impacts related to the proposed construction project:

1. Barkentine Road/Palos Verdes Drive South
2. Narcissa Drive/Palos Verdes Drive South
3. Peppertree Drive/Palos Verdes Drive South
4. Forrestal Drive-Trump National Drive/Palos Verdes Drive South

The Los Angeles County Sheriff's Department and LACOFD are the local agencies that would oversee emergency response and emergency evacuation that may occur at the project site. Any evacuations involving the project site or the areas surrounding the project site would involve the use of these roadways, but mainly Palos Verdes Drive South as the main arterial that crosses through the project site.

Palos Verdes Drive South is designated by the General Plan as a disaster route (City of Rancho Palos Verdes 2018d). Analysis provided in Section 4.13, Transportation, details the potential for portions of Palos Verdes Drive South to be affected temporarily during construction. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Construction workers with flagging equipment would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained.

For these reasons, construction of the proposed project is not expected to substantially impair implementation of an adopted emergency response plan or emergency evacuation plan during an emergency event that impacts the project area or the region. The impact would be **less than significant**. No mitigation is required.

Operation. The City of Rancho Palos Verdes has published an Emergency Operations Plan (EOP) (2018) and a Multi-Jurisdictional Hazard Mitigation Plan (2020) with the neighboring City of Rolling Hills Estates. In addition, the adjacent City of Rolling Hills has published a Hazard Mitigation Plan (2019) that includes hazard protection measures for homes that abut the project area and landslide. These available plans do not provide details on specific evacuation routes because this will depend on the incident and the orders given by the Los Angeles County Sheriff's Department at the time. However, as noted above from information provided by the Los Angeles County Department of Public Works (LADPW) and the City's General Plan, Palos Verdes Drive South is the main disaster evacuation route that would be utilized for any potential evacuations that occur at the project site. These plans also set forth procedures and protocols that the emergency response agencies would implement to safely evacuate the affected populations. One of the primary project objectives is to stabilize an existing landslide that, if not controlled, could result in restrictions or closures of portions of Palos Verdes Drive South. This arterial, as previously noted, is a local disaster evacuation route. Project implementation would provide additional protection of this important component of the evacuation network.

For these reasons, operation of the proposed project is not expected to substantially impair implementation of an adopted emergency response plan or emergency evacuation plan during

an emergency event that impacts the project area or the region. The impact would be *less than significant*. No mitigation is required.

Threshold 4.8.7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. Wildfire risks are discussed in more detail in Section 4.16, Wildfire.

Construction. During construction, the number of people present at the project site, which is within the State-designated Very High Fire Hazard Severity Zone, would increase. This would temporarily increase the number of people exposed to a risk of loss, injury, or death involving wildland fire. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained. Impacts from construction of the proposed project related to the exposure of people or structures to a significant risk involving wildland fires would be less than significant with implementation of the Construction Traffic Control Plan.

Operation. The proposed project would not increase the risk of wildfire in the area. The purpose of the proposed project is to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface by constructing surface swales and installing a complex subsurface water extraction system (hydraugers) to alleviate artesian pressure and also lower water levels within the landslide mass. Therefore, the construction associated with the proposed project would not expose people or structures to significant risk of loss, injury or death involving wildland fires. There would be no impact to project occupants, nearby residents, or workers related to post-wildfire landslide risks, and this impact would be *less than significant*. No mitigation is required.

4.8.7 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts for hazards and hazardous materials. However, the following compliance measures are applicable to the proposed project and are considered in the analysis of potential impacts. These requirements are considered to be mandatory compliance measures; therefore, they are not mitigation measures.

4.8.8 Regulatory Compliance Measures and Mitigation Measures

4.8.8.1 Regulatory Compliance Measures

Compliance Measure HAZ-1 The City of Rancho Palos Verdes (City) and/or its contractor shall prepare an Operations and Maintenance Plan. The plan shall include procedures associated with the operation, inspection, and maintenance of the project components. Inspection of each of the project components (after construction) shall be conducted on a regular basis and maintenance activities shall be conducted on an as-needed basis. In the unlikely event of a hazardous materials release, the plan will include emergency response procedures in conformance with federal, State, and local regulations.

Compliance Measure T-1

Prior to project commencement, the construction contractor shall prepare a truck haul route plan identifying routes for heavy truck and equipment traffic. The Truck Haul Route Plan shall be approved by the City Engineer. Loaded trucks shall be prohibited from traveling on Palos Verdes Drive South through the landslide.

Compliance Measure T-2

Prior to project commencement, the construction contractor shall prepare a Construction Traffic Control Plan for approval by the City Engineer. The Construction Traffic Control Plan shall include, at a minimum, the following components:

- Maintain existing access for land uses in proximity to the project site;
- Limit any potential lane closures to off-peak travel periods;
- Schedule receipt of construction materials during nonpeak travel periods to the extent possible;
- Coordinate deliveries to reduce the potential of trucks waiting to unload for extended periods of time;
- Prohibit parking by construction workers on adjacent streets and direct construction workers to available parking; and
- Maintain priority access for emergency vehicles.
- Limit hours of deliveries, to no earlier than 7:00 a.m. and no later than 6:00 p.m., Monday through Friday, and between 9:00 a.m. to 5:00 p.m. on Saturday. No construction shall be permitted on Sundays and federal holidays.

Compliance Measure WF-1

The proposed project would comply with the titles outlined in the California Code of Regulations (CCR) that establish guidelines for emergency response, fire prevention, and construction material standards.

4.8.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.8.9 Level of Significance After Mitigation

The proposed project would have no significant unavoidable adverse impacts related to hazards and hazardous materials. No mitigation would be required.

4.8.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for hazards and hazardous materials. The cumulative impact area for hazards and hazardous materials related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing hazards and hazardous materials regulations and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site. Furthermore, the proposed project does not alter the existing hazards and hazardous materials conditions on the project site or increase the potential for wildland fires to occur.

For the reasons outlined above in Section 4.8.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to hazards and hazardous materials. The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to hazards and hazardous materials. With compliance with these regulations, impacts related to hazards and hazardous materials would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to hazards and hazardous materials.

4.9 HYDROLOGY AND WATER QUALITY

This section evaluates the potential impacts to hydrology and water quality conditions from implementation of the Portuguese Bend Landslide Remediation Project (proposed project). The analysis in this section is based in part on the *Portuguese Bend Landslide Rancho Palos Verdes, CA, Hydrology & Water Resources Technical Report* (Hydrology Report) (KPFF 2022) and the *Geological, Geotechnical, and Hydrogeological Review, Portuguese Bend Landslide Remediation Project, Rancho Palos Verdes, California* (Geotechnical Report) (Haley & Aldrich, Inc. 2022) provided in Appendices E and F of this Environmental Impact Report (EIR).

4.9.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Seven comment letters included comments related to hydrology and water quality.

- The comment by the United States Fish and Wildlife Service received on January 15, 2021, recommended that the City evaluate using natural, permeable materials such as mulch and/or soil to fill the soil surface fractures rather than fly-ash slurry. It also suggested that the project minimize the use of drainage swales by evaluating whether focused placement of the proposed measures within select low-slope areas would sufficiently minimize stormwater infiltration associated with swales to avoid the need to engineer the entire length of the swale(s).
- The comment by the California Native Plant Society received on January 11, 2021, suggests that the flow reduction area proposed by the project would be inconsistent with the surrounding area and the current design would not take advantage of the groundwater percolation benefits to native plants.
- The comment by the Palos Verdes Peninsula Land Conservancy received on January 15, 2021, suggested that the clearing of culverts and removal of obstacles to the drainage be prioritized in order to keep water flowing through the canyon and reduce percolation.
- The comment by Ken Dyda received on January 3, 2021, asked whether the proposed project would contribute to existing pollution in the ocean.
- The comment by Jim Knight received on January 11, 2021, recommended that the project area include the Abalone Cove area and Altamira Canyon because of additional stormwater runoff that may flow into the canyon.
- The comment by Noel Park received on January 13, 2021, asks that erosion caused by water exiting the culvert under Palos Verdes Drive South be addressed in the EIR. The comment also requested that the flow line from the proposed retention basin to the existing culvert be accurately surveyed.
- The comment from an unknown commenter received on January 16, 2018, asked various hydrology-related questions. It asks what the risk of failure for each remediation solution is

given that a full hydrologic study of the watershed is not conducted, whether the existing infrastructure has been surveyed to determine if it is repairable, and how much water is needed to support life in the watershed, among other questions.

4.9.2 Methodology

Project impacts to hydrology and water quality are evaluated based on the proposed project's adherence to local, regional, State, and federal standards; proposed land uses and project design; changes in pre- and post-project stormwater flows; and proposed best management practices (BMPs) for control of surface runoff and reduction of pollutants in stormwater runoff.

4.9.3 Existing Environmental Setting

4.9.3.1 Surface Waters

The project site is located on the Palos Verdes Peninsula within the South Santa Monica Bay Watershed (Watershed) in the Los Angeles Basin, which comprises coastal watersheds from Castlerock Watershed to Palos Verdes Peninsula Watershed and covers approximately 87 square miles (LACDPW 2022). The Watershed is bounded by the Santa Monica Mountains on the north and by the Pacific Ocean on the south, and it includes portions of the cities of Los Angeles, Santa Monica, Culver City, El Segundo, Manhattan Beach, Redondo Beach, Torrance, Hermosa Beach, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, Rolling Hills, and unincorporated Los Angeles County.

Palos Verdes Peninsula is a single hill formation where runoff is dispersed in several directions: south into the Pacific Ocean, east through San Pedro, north through Rolling Hills and Rolling Hills Estates, or west through Palos Verdes Estates, which ultimately discharges into the Pacific Ocean.

Please refer to Table 4.9.A: Surface Water Quality Objectives for Inland Surface Waters: Los Angeles RWQCB for the Surface Water Quality Objectives as designated in the Los Angeles RWQCB Basin Plan.

4.9.3.2 Stormwater Drainage

In the existing condition, stormwater runoff on the project site generally flows from north to southwest, as shown on Figure 4.9-1: Existing Drainage Map. The majority of the project site consists of pervious areas, with residential uses, parking lots, and roads as impervious areas. The site has three existing culverts, two of which lie within the boundary of the hydrologic analysis for the project; a 36-inch high-density polyethylene (HDPE) pipe that runs below Burma Road, and a 60-inch corrugated metal pipe (CMP) that runs underneath Palos Verdes Drive South. These culverts, which are located in areas of the greatest stormwater flow, collect stormwater runoff and discharge it into a lower drainage area and, ultimately, into the Pacific Ocean. The majority of the site consists of pervious areas where water percolates into the ground, while excess runoff sheet-flows from northeast to southwest, discharging to the Pacific Ocean. Under existing conditions, stormwater runoff is not treated on site before being discharged to the Pacific Ocean.

**Table 4.9.A: Surface Water Quality Objectives for Inland Surface Waters:
Los Angeles RWQCB**

Constituent	Los Angeles RWQCB Basin Plan Objectives
Ammonia	Shall not be present at levels that, when oxidized to nitrate, pose a threat to groundwater. Numerical ammonia concentrations for inland surface waters are contained in Tables 3-1 through 3-3 of the Los Angeles RWQCB Basin Plan.
Bacterial, Coliform	<p>For fresh waters designated REC-1 where the salinity is equal to or less than 1 part per thousand, a 6-week rolling geometric mean of <i>E. coli</i> density shall not exceed 100 colony-forming units (cfu) per 100 milliliters (mL), calculated weekly with an Statistical Threshold Value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month.</p> <p>For fresh waters designated REC-1 where the salinity is greater than 1 part per thousand more than 5 percent of the time during a calendar year, a 6-week geometric mean of enterococci shall not exceed 30 cfu/100 mL calculated weekly with an STV of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month.</p> <p>For waters designated REC-2 and not designated for REC-1, the fecal coliform concentration shall not exceed a log mean of 2,000/100 mL based on a minimum of not less than four samples for any 30-day period, nor shall more than 10 percent of the samples collected during any 30-day period exceed 4,000/100 mL.</p> <p>For waters designated SHELL, the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL, nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three-tube decimal dilution test is used.</p>
Bioaccumulation	Toxic pollutants shall not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.
Biological Oxygen Demand (BOD)	Waters shall be free of substances that result in increases in the BOD, which adversely affect beneficial uses.
Biostimulatory Substances	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
Chemical Constituents	Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. Waters designated MUN shall not contain concentrations of chemical constituents in excess of the limits specified in Cal. Code Regs. Title 22 and incorporated into Tables 3-8 and 3-9 of the Los Angeles RWQCB Basin Plan.
Chlorine, Total Residual	Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 milligrams per liter (mg/L) and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses.
Color	Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.
Exotic Vegetation	Exotic vegetation shall not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.
Floating Material	Waters shall not contain floating materials, including solids, liquids, foams, and scum in concentrations that cause nuisance or adversely affect beneficial uses.
Methylene Blue Activated Substances (MBAS)	Waters shall not have MBAS concentrations greater than 0.5 mg/L in waters designated MUN.
Nitrogen (Nitrate, Nitrite)	Waters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance or adversely affect beneficial uses.

**Table 4.9.A: Surface Water Quality Objectives for Inland Surface Waters:
Los Angeles RWQCB**

Constituent	Los Angeles RWQCB Basin Plan Objectives
Oxygen, Dissolved	The mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5 mg/L except when natural conditions cause lesser concentrations. The dissolved oxygen content of all surface waters designated WARM shall not be depressed below 5 mg/L as a result of waste discharge. The dissolved oxygen content of all surface waters designated COLD shall not be depressed below 7 mg/L as a result of waste discharge. The dissolved oxygen content of all surface waters designated as both COLD and SPWN shall not be depressed below 7 mg/L as a result of waste discharge.
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life. Waters designated MUN shall not contain concentrations of pesticides in excess of the limiting concentrations specified in Table 64444-A of Cal. Code Regs. Title 22, Section 64444, which is incorporated into Table 3-9 of the Los Angeles RWQCB Basin Plan.
pH	Inland water shall not be depressed below 6.5 pH or raised above 8.5 pH as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 unit from natural conditions as a result of waste discharge.
Polychlorinated Biphenyls (PCBs)	The purposeful discharge of PCB to waters is prohibited. Pass-through or uncontrollable discharges to waters, or at locations where the waste can subsequently reach waters, are limited to 70 picograms per liter (pg/L) (30-day average) for protection of human health and 14 nanograms per liter (ng/L) (daily average) to protect aquatic life in inland fresh waters.
Priority Pollutants	The water quality criteria for metals contained in the California Toxics Rule (CTR) are expressed as a function of a water effect ratio (WER). The WER has a default value of 1.0 unless a site-specific WER is approved by the regional board. There are two exceptions where the criteria are not a function of a WER. The freshwater criteria for selenium are not a function of WER. The freshwater and saltwater criteria for mercury are not a function of WER.
Radioactive Substances	Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. Waters designated MUN shall not contain concentrations of radionuclides in excess of the limits specified in Cal. Code Regs. Title 22, Sections 64442 and 64443, which is incorporated into Tables 3-12a and 3-12b of the Los Angeles RWQCB Basin Plan.
Solid, Suspended, or Settleable Materials	Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.
Tastes and Odors	Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.
Temperature	The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated that such alteration in temperature does not adversely affect beneficial uses. For waters designated WARM, water temperature shall not be altered by more than 5°F above the natural temperature and shall not exceed 80°F as a result of waste discharges.
Toxicity	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits: <ul style="list-style-type: none"> • Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%. • Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

Source: *Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, Los Angeles RWQCB. 2019.

°F = degrees Fahrenheit

Cal. Code Regs. = California Code of Regulations

MUN = municipal and domestic supply

NTU = National Turbidity Units

RWQCB = Regional Water Quality Control Board

WARM = warm freshwater habitat

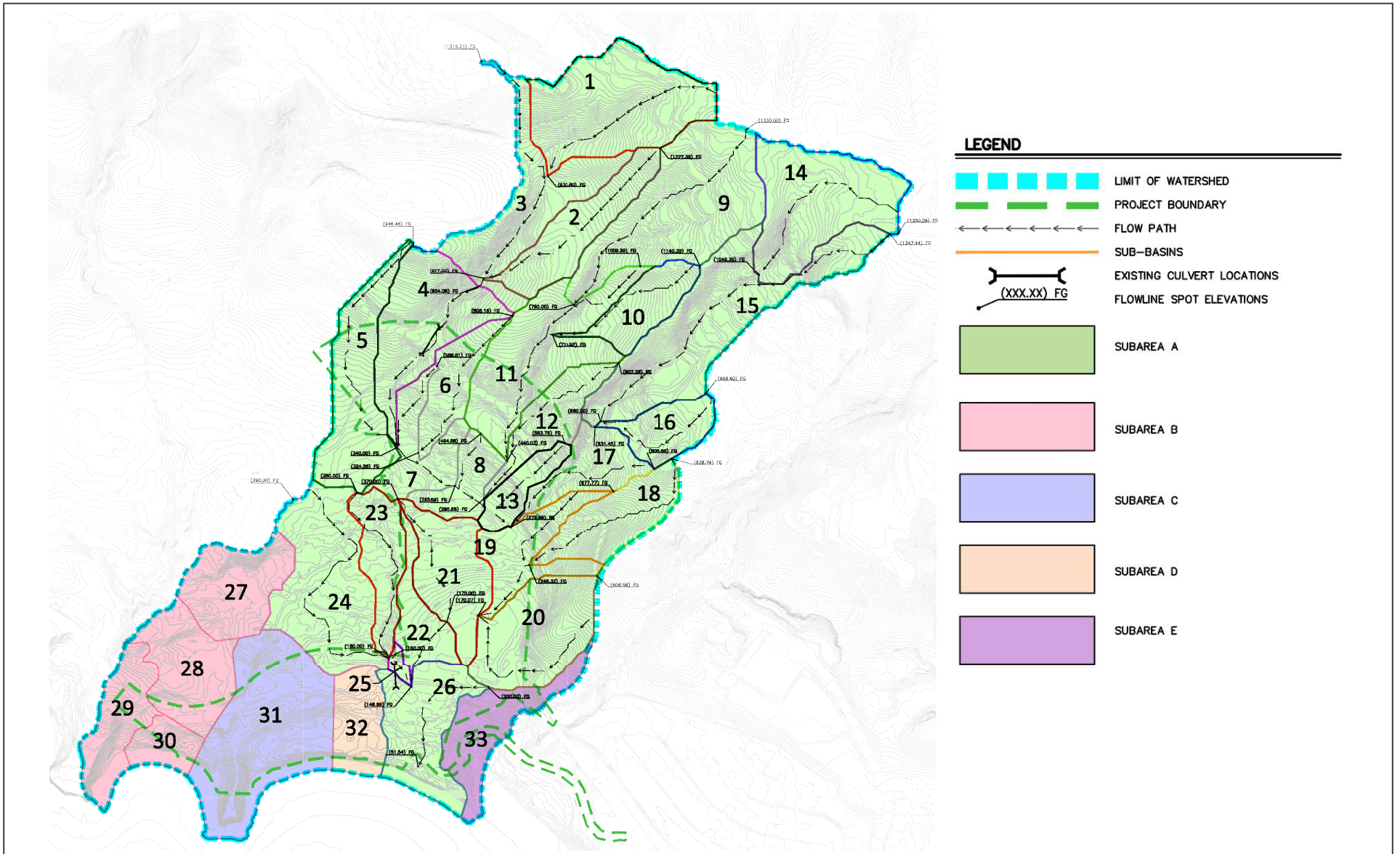


FIGURE 4.9-1

LSA



NOT TO SCALE

SOURCE: Kpff

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4.9.3.3 Groundwater

The City partially overlays the Los Angeles Coastal Plain Groundwater Basin, which consists of the Hollywood, Santa Monica, Central, and West Coast Groundwater subbasins. The City also partially overlays the West Coast subbasin; however, the project site is outside the bounds of the subbasin. There is no underlying groundwater basin at the project site. Under existing conditions, groundwater recharge in the PBL complex area contributes to persistent elevated groundwater pore pressure above and below the rupture surface. Groundwater recharge in this area is primarily attributed to the following: disrupted flow of natural channels, which appear to terminate or change slope abruptly near the limits of the landslide; ponding of water upstream of constructed embankments, including at locations of broken or sediment-filled stormwater conveyance structures; ponding of water at the PBL complex within closed depressions upstream of slump deposits or constructed embankments; direct precipitation and infiltration through soils; percolation of water from private residential on-site wastewater treatment systems (septic systems); drainage of surface water and stormwater from upgradient locations and subsequent infiltration and percolation at the PBL complex or into upgradient depressions; and groundwater flow from upgradient locations (Haley & Aldrich 2022).

According to the Hydrology Report (KPF 2022) prepared for the project, groundwater could be encountered at depths of 11 to 20 feet below the ground surface (bgs). This information is consistent with groundwater data collected during previous site explorations in 1998, which identified groundwater depths to be between approximately 5 and 110 feet below existing grade (Haley & Aldrich, Inc. 2022). In general, groundwater levels fluctuate with the seasons, and local zones of perched groundwater may be present within the near-surface deposits due to local seepage or during rainy seasons.

Please refer to Table 4.9.B: Groundwater Quality Objectives for Groundwater Basins for the Groundwater Quality Objectives as designated in the Los Angeles RWQCB Basin Plan.

4.9.3.4 Flood Zones

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Nos. 06037C1940F (September 26, 2008) and 06037C2026G (April 21, 2021), the project area is not located within a 100-year floodplain. The project area is located entirely within FEMA Zone X, which is defined by FEMA as an area outside the 500-year floodplain. The edge of the project site that borders the Pacific Ocean is located within Zone VE. Zone VE is defined as coastal areas with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves (FEMA 2008, 2021).

Table 4.9.B: Groundwater Quality Objectives for Groundwater Basins

Constituent	Basin Plan Objectives
	Los Angeles RWQCB
Bacteria	In groundwaters used for domestic or municipal supply (MUN), the concentration of coliform organisms over any 7-day period shall be less than 1.1/100 milliliter (mL)
Chemical Constituents and Radioactivity	Groundwaters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in the following provisions of Title 22 of the California Code of Regulations and incorporated by reference into Tables 3-8, 3-9, 3-12a, and 3-12b of the Los Angeles RWQCB Basin Plan. Groundwaters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.
Mineral Quality	Numerical mineral quality objectives for individual groundwater basins are contained in Table 3-13 of the Los Angeles RWQCB Basin Plan.
Nitrogen (Nitrate, Nitrite)	Groundwaters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen (NO ₃ -N + NO ₂ -N), 45 mg/L as nitrate (NO ₃), 10 mg/L as nitrate-nitrogen (NO ₃ -N), or 1 mg/L as nitrite-nitrogen (NO ₂ -N).
Taste and Odor	Groundwaters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Source 1: *Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* Los Angeles Regional Water Quality Control Board. 2014.

Source 2: *Santa Ana River Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin*, Santa Ana Regional Water Quality Control Board 1995, amended 2019.

mL= milliliters

°C = degrees Celsius

AGR = agricultural water supply

mg/L= milligrams per liter

MUN= Municipal Water Supply

pCi/L= picocuries per liter of air

RWQCB = Regional Water Quality Control Board

TDS = total dissolved solids

4.9.4 Regulatory Setting

4.9.4.1 Federal Regulations

Federal Water Pollution Control Act. The Federal Water Pollution Control Act requires discharges (from point and nonpoint sources) into navigable water to meet stringent National Pollutant Discharge Elimination System (NPDES) permit standards. The USEPA has published regulations establishing requirements for application of stormwater permits for specified categories of industries, municipalities, and certain construction activities. The regulations require that discharges of stormwater from construction activity affecting 1 acre or more be regulated and covered by an NPDES permit. When a construction area exceeds 1 acre in size, the applicant must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to control nonpoint-source pollution.

Clean Water Act. In 1972, the Federal Water Pollution Control Act (now referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with an NPDES permit. In 1987, the CWA was again amended to require that the USEPA establish regulations for the permitting of stormwater discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the USEPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria

necessary to support those uses. Water quality criteria are set concentrations or levels of constituents (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that supports a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, USEPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a “factor of safety” included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

Direct discharges of pollutants into waters of the United States are not allowed except in accordance with the NPDES program established in Section 402 of the CWA.

In 2008, the USEPA published draft Effluent Limitation Guidelines (ELGs) for the construction and development industry. On December 1, 2009, the USEPA finalized its 2008 Effluent Guidelines Program Plan.

In California, the NPDES stormwater permitting program is administered by the State Water Resources Control Board (SWRCB). The SWRCB was created by the State Legislature in 1967. The joint authority of water distribution and water quality protection allows the SWRCB to provide protection for the State’s waters through its nine Regional Water Quality Control Boards (RWQCBs). The RWQCBs develop and enforce water quality objectives and implement plans that will best protect California’s waters, acknowledging areas of different climate, topography, geology, and hydrology. The RWQCBs develop “basin plans” for their hydrologic areas, issue waste discharge requirements (WDRs), enforce action against stormwater discharge violators, and monitor water quality.

National Flood Insurance Act. Congress acted to reduce the costs of disaster relief by passing the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief efforts by restricting development in floodplains. FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in a floodplain. FEMA issues Flood Insurance Rate Maps (FIRMs) of communities participating in the NFIP. These maps delineate flood hazard zones in the community. The City of Rancho Palos Verdes manages local storm drain facilities, and the Los Angeles County Flood Control District (LACFCD) is responsible for regional flood control planning within Los Angeles County.

Federal Anti-Degradation Policy. The Federal Anti-Degradation Policy (40 Code of Federal Regulations [CFR] 131.12) requires states to develop statewide anti-degradation policies and identify methods for implementing them. Pursuant to the CFR, state anti-degradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water

uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the State finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

Safe Drinking Water Act. The federal Safe Drinking Water Act (SDWA), established in 1974, sets drinking water standards throughout the country and is administered by the USEPA. The drinking water standards established in the SDWA, as set forth in the CFR, are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR Part 141) and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR Part 143). California passed its own Safe Drinking Water Act in 1986 that authorizes the State's Department of Health Services (DHS) to protect the public from contaminants in drinking water by establishing maximum contaminants levels (MCLs), as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15, that are at least as stringent as those developed by the USEPA, as required by the federal SDWA.

4.9.4.2 State Regulations

Porter-Cologne Water Quality Control Act of 1970. The federal CWA places the primary responsibility for the control of water pollution and planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and the nine RWQCBs broad powers to protect water quality and is the primary vehicle for the implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface water and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The City, including the project site, is within the jurisdictional boundaries of the Los Angeles RWQCB.

California Toxics Rule. As stated previously, because California had not established a complete list of acceptable water quality criteria for toxic pollutants, USEPA Region IX established numeric water quality criteria for toxic constituents in the form of the CTR. The CTR provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated for human health or aquatic life uses. The CTR is often used by the RWQCBs when establishing water quality objectives and TMDLs. Although the CTR criteria do not apply directly to discharges of stormwater runoff, they are utilized as benchmarks for toxics in urban runoff. The CTR is used as a benchmark to evaluate the potential ecological impacts of stormwater runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain

water bodies. Acute criteria provide benchmarks for the highest permissible concentration below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., 4 days or more) without deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than 4 days) and provide a more appropriate benchmark for comparison for stormwater flows.

CTR criteria are applicable to the receiving water body and therefore must be calculated based on the probable hardness values of the receiving waters. At higher hardness values for receiving waters, certain constituents (including copper, lead, and zinc) are more likely to be complexed (bound with) components in the water column. This in turn reduces the bioavailability and resulting potential toxicity of these metals.

California Anti-Degradation Policy. The California Anti-Degradation Policy, otherwise known as the *Statement of Policy with Respect to Maintaining High Quality Water in California*, was adopted by the SWRCB (State Board Resolution No. 68-16) in 1968. Unlike the Federal Anti-Degradation Policy, the California Anti-Degradation Policy applies to all waters of the State, not just surface waters. The policy states that whenever the existing quality of a water body is better than the quality established in individual basin plans, such high quality shall be maintained and discharges to that water body shall not unreasonably affect present or anticipated beneficial use of such water resource.

General Construction Activity Storm Water Permit. The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0014-DWQ, 2012-0006-DWQ (Construction General Permit), adopted by the SWRCB, regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least 1 acre of total land area. The Construction General Permit authorizes the discharge of stormwater to surface waters from construction activities.

The Construction General Permit requires that all developers of land where construction activities will occur over more than 1 acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the General Permit;
- Eliminate or reduce nonstormwater discharges to storm sewer systems and other waters of the United States;
- Develop and implement a SWPPP that specifies BMPs that will reduce pollution in stormwater discharges to the Best Available Technology/Economically Achievable/Best Conventional Pollutant Control Technology standards;
- Perform inspections and maintenance of all BMPs; and
- Conduct stormwater sampling, if required based on risk level.

To obtain coverage under the Construction General Permit, a project applicant must electronically file all permit registration documents with the SWRCB prior to the start of construction. Permit registration documents must include a Notice of Intent (NOI), a Risk Assessment, a site map, a SWPPP, an annual fee, and a signed certification statement.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials. The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

Sustainable Groundwater Management Act. The Sustainable Groundwater Management Act (SGMA) of 2014 is a comprehensive three-bill package that Governor Jerry Brown signed into California State law in September 2014. The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for State intervention if necessary to protect the resource. The plan is intended to ensure a reliable groundwater supply for California for years to come.

The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdrafts of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that are required to adopt Groundwater Sustainability Plans (GSPs) to manage the sustainability of the groundwater basins.

California Water Plan. The California Water Plan (Plan) provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The Plan, which is updated every 5 years, presents basic data and information on California's water resources, including water supply evaluations and assessments of agricultural, urban, and environmental water uses, to quantify the gap between water supplies and uses. The Plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the State's water needs.

The goal for the California Water Plan Update is to meet California Water Code (CWC) requirements, receive broad support among those participating in California's water planning, and be a useful document for the public, water planners throughout the State, legislators, and other decision makers.

4.9.4.3 Regional Regulations

Los Angeles County Regional Phase I MS4 NPDES Permit . *The Waste Discharge Requirements and NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties, Order R4-2021-0105 NPDES NO. CA004004* is the current Municipal Separate Storm Sewer System (MS4) Permit for Los Angeles County. The requirements of this Order (the "Permit") cover 85 cities and most of the unincorporated areas of Los Angeles County as well as 10 cities within Ventura County. Under the Permit, the LACFCD is designated as the Principal Permittee. The Permittees are the 84 Los Angeles County cities (including the City of Rancho Palos Verdes) and Los Angeles County. Collectively, these are the "Co-Permittees." The Principal Permittee helps to facilitate activities necessary to comply with the requirements outlined in the Permit but is not responsible for ensuring compliance of any of the Permittees. The Los Angeles MS4 contains requirements that are necessary to improve efforts to reduce the discharge of pollutants in stormwater runoff to the maximum extent practicable and achieve water quality standards.

The Los Angeles County MS4 Permit requires co-permittees to implement a Stormwater Quality Management Program to reduce discharges of pollutants in stormwater to the maximum extent practicable and prohibit nonstormwater discharges to the MS4.

The County prepared the 2014 Low Impact Development (LID) Standards Manual in compliance with the requirements of the Los Angeles County MS4 Permit. The LID Standards Manual provides guidance for the implementation of stormwater quality control measures in new development and redevelopment projects.

Los Angeles Regional Water Quality Control Board Groundwater Discharge Permit. The Los Angeles RWQCB requires a permit¹ for discharging wastes to surface waters from activities involving groundwater extraction. Order No. R4-2018-0125 (NPDES No. CAG994004) covers treated or untreated groundwater generated from permanent or temporary dewatering operations or other appropriate wastewater discharge not specifically covered in other general NPDES permits in the Los Angeles region. To be covered under this order, a discharger must:

1. Demonstrate that pollutant concentrations in the discharge shall not cause violation of any applicable water quality objective for the receiving waters, including discharge prohibitions;
2. Demonstrate that the discharge shall not exceed the applicable water quality objectives/criteria for the receiving waters; and
3. Conduct water quality screening of a representative sample of the discharge to prove that a reasonable potential for discharge of toxics does not exist.

In addition, the permit covers discharge from dewatering operations in the vicinity of creeks where the groundwater is hydrologically connected and has similar water chemistry to the surface water body to which the groundwater will be discharged. However, if groundwater discharge in the project area is found to exceed the water quality screening levels for general permits, the project would be subject to this General Permit, and treatment of the wastewater would be required to treat the groundwater to meet effluent limitations contained in the permit prior to discharge.

Board Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. As required by the CWC, the Los Angeles RWQCB has adopted a plan entitled “Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties” (Basin Plan). Specifically, the Basin Plan designates beneficial uses for surface and groundwater, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State’s anti-degradation policy, and describes implementation programs to protect all waters in the Los Angeles region.

The Basin Plan does not designate any beneficial uses for Portuguese Bend Beach.

Basin Plans also establish implementation programs to achieve water quality objectives to protect beneficial uses and require monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

¹ Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties, Order No. R4-2018-0125, National Pollutant Discharge Elimination System No. CAG994004.

Basin Plans have established narrative and numeric water quality objectives for inland surface streams and groundwater. If water quality objectives are exceeded, the RWQCBs can use their regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. Relevant surface water quality objectives for all inland surface waters and groundwater under the jurisdiction of the Los Angeles RWQCB that are applicable to the receiving waters for the project site are shown in Table 4.9.A and Table 4.9.B, respectively.

In addition, the Basin Plan incorporates (by reference) all applicable SWRCB and RWQCB plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.

4.9.4.4 Local Regulations

City of Rancho Palos Verdes Municipal Code. Title 15 of the Rancho Palos Verdes Municipal Code regulates construction activities within the city. Title 13 of the Rancho Palos Verdes Municipal Code contains water quality regulations for stormwater discharges within the city.

- **Section 13.10.040** of the Municipal Code describes prohibited activities related to stormwater and runoff.
- **Section 13.10.045** of the Municipal Code describes discharges that are exempted or conditionally exempted from the prohibited activities described in Section 13.10.040.
- **Section 13.10.050** of the Municipal Code requires that property owners comply with regulations related to septic waste, water use, materials storage, removal and disposal of debris and residue, and maintenance of structural BMPs.
- **Section 13.10.060** of the Municipal Code sets requirements for industrial/commercial development and construction activities.
- **Section 13.10.065** of the Municipal Code requires compliance with the Los Angeles County NPDES MS4 permit and LID requirements for new development and redevelopment.
- **Section 15.38.010** of the Municipal Code requires that a geological or geotechnical report be prepared to evaluate the effect of any grading on a site.

4.9.5 Thresholds of Significance

The thresholds for hydrology and water quality impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to hydrology and water quality if it would:

Threshold 4.9.1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Threshold 4.9.2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin.

- Threshold 4.9.3:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
- Threshold 4.9.3.i:** Result in substantial erosion or siltation on- or off-site.
 - Threshold 4.9.3.ii:** Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
 - Threshold 4.9.3.iii:** Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
 - Threshold 4.9.3.iv:** Impede or redirect flood flows.
- Threshold 4.9.4:** In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Threshold 4.9.5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The IS, provided as Appendix A, substantiates that impacts associated with Threshold 4.94 would be less than significant because the project site is not located in proximity to a closed body of water (e.g., a lake or reservoir) or storage tank, would not be subject to hazards associated with inundation from a seiche, and would not risk release of pollutants. However, the project site is located on a bluff above the Pacific Ocean coastline, and a small portion of the site is located within a tsunami inundation hazard area mapped by the California Geological Survey (DOC 2022). However, the landslide remediation project does not involve the construction of any structures that could be affected by a tsunami, nor does it involve the long-term use or storage of hazardous materials that would result in a release of pollutants due to inundation. Conditions under the proposed project would be similar to existing conditions and would not increase the potential for site inundation. For these reasons, impacts would be less than significant and no further discussion is required.

4.9.6 Project Impacts

- Threshold 4.9.1:** Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact.

Construction. The proposed project would implement geotechnical engineering solutions in order to minimize landslide movement in the PBL area. As described in Chapter 3.0, Project Description, the PBL area is historically prone to land movement due to increased pore water pressure that results from elevated groundwater levels. The proposed project would include the following improvements to minimize landslide risk by minimizing stormwater infiltration into the subsurface and reducing artesian pressure below the landslide basal surface.

- Infilling surface fractures to reduce the infiltration of surface water into the ground;
- Constructing surface swales and a flow reduction area to collect, slow, and convey surface water to the Pacific ocean; and
- Installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and lower groundwater levels within the landslide mass.

Construction activities such as earthmoving, maintenance of construction equipment, handling of construction materials, and dewatering can contribute to pollutant loading in stormwater runoff. Pollutants of concern during construction include sediment, trash, nutrients, pesticides, metals, pathogens, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on on-site surface water, off-site downstream receiving waters, and groundwater. During soil-disturbing construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, and petroleum products (e.g., solvents, and fuels) may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. Sediment from increased soil erosion and chemicals from spills and leaks have the potential to be discharged to downstream receiving waters during storm events, which can affect water quality.

Because construction of the proposed project would disturb greater than 1 acre of soil, the proposed project is subject to the requirements of the Construction General Permit, as specified in Regulatory Compliance Measure (RCM) WQ-1, identified below. As also specified in RCM WQ-1, a SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction, in compliance with the requirements of the Construction General Permit. As referenced by the Hydrology Report, an Erosion Control Plan would be prepared in order to reduce or eliminate the discharge of potential pollutants from stormwater runoff during construction activities. The SWPPP and Erosion and Sediment Control Plan would detail the BMPs to be implemented during construction and would reduce sedimentation flowing off site and into downstream receiving waters. Construction BMPs may include, but are not limited to: erosion control, sediment control, nonstormwater management, and materials management. With implementation of the SWPPP and the Erosion Control Plan, site-specific BMPs would reduce or eliminate the discharge of potential pollutants from stormwater runoff. Prior to commencing construction, the City's Community Development Director, or designee, shall verify that project plans require the project contractor to install adequate erosion and sedimentation barriers (e.g., silt fencing, as described below) prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. This silt fencing shall also serve as a temporary barrier to further minimize the potential for special-status amphibians and other wildlife to enter work areas during construction. The barriers shall consist of 3-foot-tall silt fencing buried to a depth of at least 6 inches below the soil surface along the outer limits of all work areas (or as otherwise required by the stormwater pollution and prevention plan (Stormwater Pollution Prevention Plan [SWPPP] and BMPs) These barriers shall be inspected daily by construction personnel and maintained and repaired as necessary for the duration of construction to ensure

they are functional and are not a hazard to wildlife on the outer side of the fence. A City-approved qualified biologist shall monitor all fence installation. All barriers shall be removed following completion of construction. In addition, the project proponent would be required to comply with City Municipal Code Title 13.10, Storm Water and Urban Runoff and Pollution Control and the City grading permit regulations to reduce sedimentation and erosion. Therefore, with compliance with RCM WQ-1 and the City's Municipal Code, construction-related impacts on surface water quality would be reduced to a less than significant level.

According to the Hydrology Report prepared for the project, groundwater could be encountered at depths of 11 to 20 feet below the ground surface. This information is consistent with groundwater data collected during previous site explorations in 1998, which identified groundwater depths to be between approximately 5 and 110 feet below existing grade (Haley & Aldrich, Inc. 2022). In general, groundwater levels fluctuate with the seasons, and local zones of perched groundwater may be present within the near-surface deposits due to local seepage or during rainy seasons. Due to the fact that groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present near the surface, groundwater dewatering may be required during project construction. Groundwater dewatering activities could affect surface water quality through the discharge of polluted groundwater to surface water bodies. Additionally, the management of any resultant hazardous wastes from project construction could increase the opportunity for hazardous materials releases into groundwater. As specified in RCM WQ-2, groundwater dewatering activities would comply with the *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Groundwater Discharge Permit) (Order No. R4-2018-0125 (NPDES No. CAG994004)). The Groundwater Discharge Permit covers treated or untreated groundwater generated from permanent or temporary dewatering operations or other appropriate wastewater discharge not specifically covered in other general NPDES permits in the Los Angeles region. If dewatering is required, the proposed project must demonstrate that pollutant concentrations in the discharge shall not cause violation of any applicable water quality objective for the receiving waters, including discharge prohibitions; demonstrate that the discharge shall not exceed the applicable water quality objectives/criteria for the receiving waters; and conduct water quality screening of a representative sample of the discharge to prove that a reasonable potential for discharge of toxics does not exist. Compliance with the Groundwater Discharge Permit would ensure dewatering as part of project construction would not impair surface water quality.

The proposed project must comply with the City's Municipal Code as well as RCM WQ-1 and RCM WQ-2, which includes obtaining coverage under the Construction General Permit (including preparation of a SWPPP, implementation of site-specific construction BMPs to target and reduce pollutants of concern in stormwater runoff) and complying with all applicable provisions in the Groundwater Discharge Permit. Compliance with all regulatory requirements would ensure that impacts related to a violation of any water quality standard or degradation of surface or groundwater quality during construction would be less than significant, and no mitigation is required.

Operation. The proposed project improvements include infilling surface fractures to reduce infiltration of surface water into the ground; constructing surface swales and a flow reduction

area to collect, slow, and convey surface water to the ocean; refurbishing existing pipes and culverts to collect and convey stormwater flow across the site, as well as constructing new ones; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass. The purpose of these improvements is to minimize landslide movement to preserve infrastructure and open lands, reduce soil erosion, and reduce health and safety concerns related to the integrity of the road system, sewer system, and other infrastructure. According to the Hydrology Report, under existing conditions, stormwater runoff is not treated on site before being discharged to the ocean.

Under proposed conditions, stormwater runoff would sheet flow across the project site and be captured by drainage swales, which would drain to the flow reduction area (i.e., detention basin), discharge to a culvert that passes under Palos Verdes Drive South, and then be discharged to the Pacific Ocean. Pollutants of concern in stormwater runoff could include sediment, nutrients, metals, pathogens, oil and grease, and pesticides. The flow reduction area would allow fine particles of soil to settle in the flow reduction area prior to discharging into the Pacific Ocean. The City is a co-permittee on the Los Angeles MS4 Permit (*Waste Discharge Requirements and NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties*, Order R4-2021-0105 NPDES NO. CA004004 [Los Angeles MS4 Permit]). A Hydrology and Water Quality Technical Report has been prepared for the project in compliance with the Los Angeles MS4 Permit. Implementation of RCM WQ-3 would require the proposed project to comply with the requirements of the City's MS4 permit. Implementation of RCM WQ-4 would require the applicant to prepare a Final Hydrology Report, to be reviewed and approved by the City and LACFCD, that addresses the requirements of the Los Angeles MS4 Permit, including incorporating BMPs that target pollutants of concern in stormwater runoff. Furthermore, the proposed project would be required to comply with Section 13.10.065 of the City's Municipal Code, which requires compliance with the Los Angeles County MS4.

Implementation of the proposed below-grade hydraugers would alleviate artesian water pressure underground. Once the hydraugers are implemented, water must be collected and stored in tanks to be tested for quality. Depending on the results of those tests, the water would either be reused or discharged to the ocean. According to the Hydrology Report, the project may incorporate storage tanks for collecting water from the hydraugers. The storage tanks would comply with all applicable existing regulations at the project site regarding the handling of hazardous materials. Refer to Chapter 4.8, Hazards and Hazardous Materials, for a summary of regulations regarding the handling of hazardous materials. This would prevent the project from affecting or expanding any potential areas of contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated, as defined in CCR Title 22, Division 4, Chapter 15, and the SDWA.

With implementation of RCM WQ-1 and RCM WQ-4, which require compliance with the Construction General Permit and Groundwater Discharge Permit during construction and compliance with the Los Angeles MS4 Permit and City's Municipal Code, including preparation of a Final Hydrology Report, during project operations, the proposed project would not violate any

water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant.

Threshold 4.9.2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede substantial groundwater management of the basin?

Less Than Significant Impact.

Construction. As discussed above, during construction, groundwater could be encountered at depths of 11 to 20 feet below the ground surface. Due to the fact that groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present near the surface, groundwater dewatering may be required during project construction. The City partially overlays the Los Angeles Coastal Plain Groundwater Basin, specifically the West Coast Subbasin. However, the project site is outside the boundaries of the subbasin. In addition, groundwater dewatering would be localized and temporary, and the volume of groundwater removed would not be substantial. Therefore, construction impacts related to a decrease in groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be less than significant, and no mitigation is required.

Operation. The proposed project improvements include infilling surface fractures to reduce infiltration of stormwater into the ground; constructing surface swales and a flow reduction area to collect, slow, and convey surface water to the ocean; refurbishing existing pipes and culverts to collect and convey stormwater flow across the site, as well as constructing new ones; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass. A significant contributor to the instability of the PBL and the continuous and active landslides is the presence of persistent elevated groundwater, which is putting pressure on the surrounding soils.

According to the Geotechnical Report prepared for the project (Geo-Logic Associates, Inc. 2019), the following actions are contributing to groundwater recharge:

- Significant quantities of runoff originating from nearby canyons drain onto the active landslide terrain and infiltrate the ground within the PBL and the project site specifically.
- Ponding of water within closed depressions upstream of slump deposits or constructed embankments is occurring at locations of broken or sediment-filled stormwater conveyance structures (e.g., impaired pipe and/or culvert for Portuguese Canyon along Burma Road, ponded water north of Palos Verdes Drive South, apparently undersized and frequently disconnected drainage pipe along Palos Verdes Drive South) and within closed depressions upstream of slump deposits or constructed embankments, which allows water to infiltrate rather than being carried downslope.
- Direct infiltration through soils and into open fractures at the PBL, where surface cracks, fractures, and fissures have developed.

- Percolation of water from private residential on-site wastewater treatment systems (septic systems).
- Underflow groundwater flow from upgradient locations from irrigation recharge occurring upslope of the project site.

The proposed project is designed to decrease on-site infiltration and groundwater recharge in order to increase site stability and public safety. As stated above, the City of Rancho Palos Verdes partially overlays the Los Angeles Coastal Plain Groundwater Basin, specifically the West Coast Subbasin. However, according to the Hydrology Report, the project site is outside the boundaries of the subbasin. Therefore, the proposed reduction in groundwater recharge would not substantially decrease groundwater supplies. Therefore, the proposed project would not deplete groundwater supplies or interfere with groundwater recharge in a manner that may impede sustainable groundwater management, and impacts would be less than significant. No mitigation would be required.

Threshold 4.9.3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion or siltation on- or off-site; (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; (iv) Impede or redirect flood flows?

As noted previously, the project site is largely undeveloped and consists primarily of pervious areas with residential uses, parking lots, and roads as impervious areas. Under existing conditions, stormwater runoff generally flows from north to southwest as shown on Figure 4.9-1, Existing Drainage Map. Because of the pervious nature of the project site, a majority of the stormwater infiltrates, while excess runoff sheet flows across the project site from northeast to southwest and eventually discharges to the Pacific Ocean.

The project site has three existing culverts, two of which lie within the boundary of the hydrologic analysis for the project: a 36-inch HDPE pipe that runs below Burma Road and a 60-inch CMP culvert pipe that runs underneath Palos Verdes Drive South. These culverts are located in areas of the greatest stormwater flow to collect stormwater runoff and discharge it into a lower drainage area and, ultimately, into the Pacific Ocean.

The proposed project would implement geotechnical engineering solutions to minimize landslide movement in the PBL area, including infilling surface fractures to reduce infiltration of stormwater into the ground; constructing surface swales and a flow reduction area to collect, slow, and convey surface water to the ocean; refurbishing existing pipes and constructing new pipes, which will also collect and convey stormwater to the ocean; and installing a subsurface water extraction system (hydraugers).

Threshold 4.9.3.i: Result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact.

Construction. During project construction activities, soil would be exposed and disturbed, and drainage patterns would be temporarily altered during grading and other construction activities. Therefore, there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. As specified in RCM WQ-1, the proposed project would be required to obtain coverage under the Construction General Permit, which requires the preparation of a SWPPP and implementation of BMPs during project construction to minimize erosion and retain sediment on site, as well as compliance with the City's Municipal Code. Compliance with the requirements of the Construction General Permit and the City's Municipal Code, as specified in RCM WQ-1, would ensure that construction impacts related to on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

Operation. As a part of the surface water improvements, an engineered swale would be designed to collect stormwater runoff and discharge it into a proposed flow-reduction basin. The flow reduction area would release stormwater at a gradual rate through a small opening and route it through a 60-inch pipe that runs under Palos Verdes Drive South, where it would be discharged to the Pacific Ocean. The engineered swale combined with the flow-reduction area is primarily intended to reduce on-site infiltration, which contributes to landslide movement. However, the engineered swale and flow reduction area would also reduce soil erosion by collecting and retaining stormwater in the flow reduction area, which will allow fine particles of soil to settle in the flow reduction area before it is discharged through a 60-inch pipe that runs under Palos Verdes Drive South to the Pacific Ocean. Refer to Figure 4.9-2, Proposed Drainage Map, for the new drainage areas proposed for the project. The proposed project would not increase stormwater flows but rather would improve existing on-site stormwater collection and conveyance infrastructure in order to better manage stormwater flows and reduce on- and off-site erosion and siltation. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on- or off-site, but rather would result in a net benefit by slowing the water discharge rate and thereby reducing erosion. Impacts would be less than significant, and no mitigation is required.

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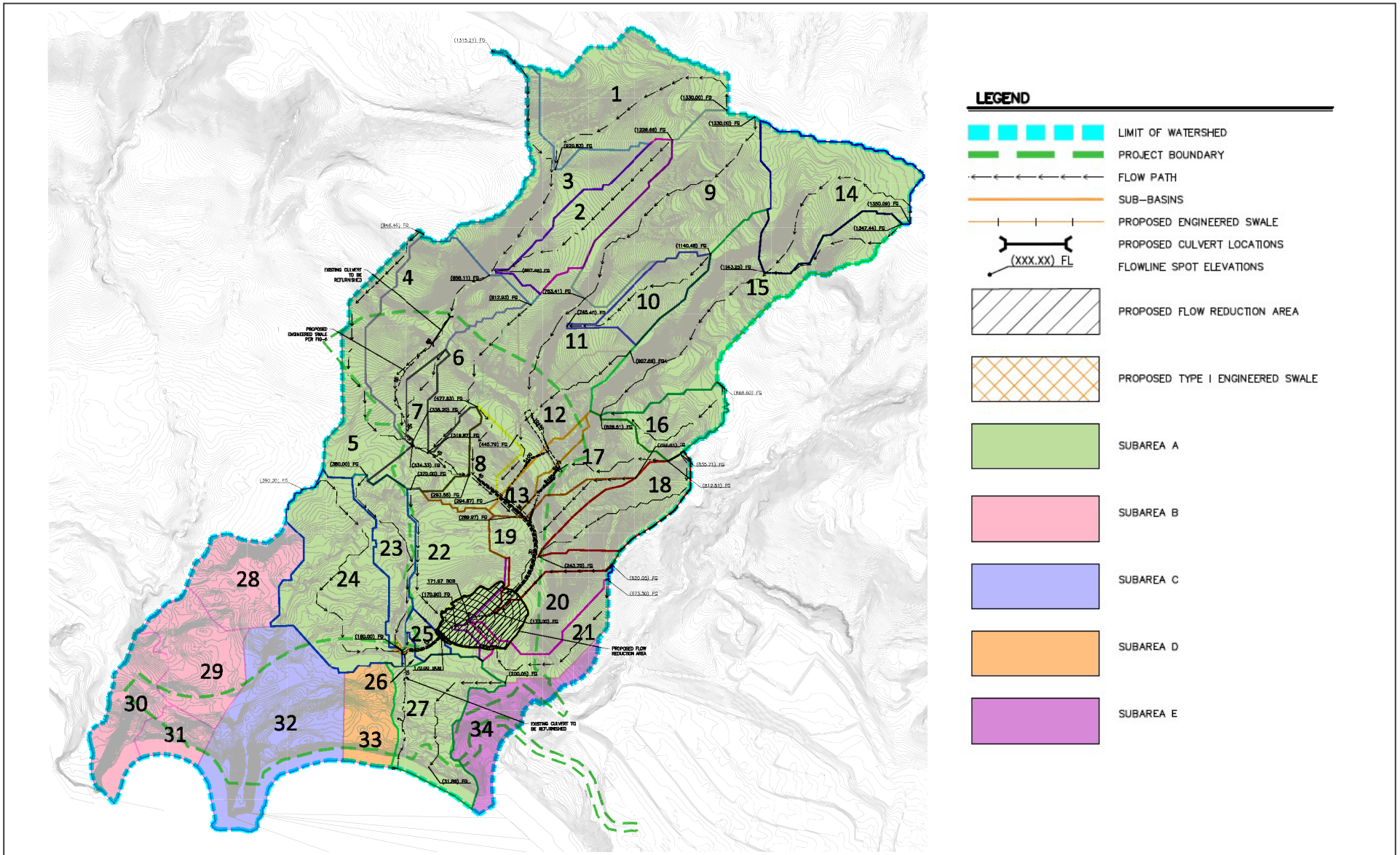


FIGURE 4.9-2

LSA



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Threshold 4.9.3.ii: Would the project substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact.

Construction. As specified in RCM WQ-1, the proposed project would comply with the requirements of the Construction General Permit during project construction, which would include the preparation and implementation of a SWPPP. The SWPPP would include construction BMPs to control the rate and amount of on-site surface runoff and to direct flows to ensure that stormwater runoff from the construction site does not result in on- or off-site flooding. With adherence to **RCM WQ-1**, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in flooding and impede or redirect flood waters would be less than significant, and no mitigation is required.

Operation. The proposed project would manage stormwater runoff and reduce infiltration in order to minimize movement in the existing landslide area. The proposed project improvements include infilling surface fractures to reduce infiltration of stormwater into the ground; constructing surface swales and a flow reduction area to collect, slow, and convey stormwater to the ocean; refurbishing existing pipes and culverts, as well as constructing new ones to collect and convey stormwater flow across the site; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass.

In the existing condition, stormwater flows and infiltration at the project site is causing site instability and landslides. As part of the surface stormwater improvements, an engineered swale would be designed to collect stormwater runoff and discharge it into a proposed flow-reduction area. The flow reduction area would release stormwater at a gradual rate through a small opening and route it through a 60-inch pipe that runs under Palos Verdes Drive South, where it would be discharged to the Pacific Ocean. Proposed improvements also include installing, replacing, and refurbishing underground piping throughout the project site to properly convey stormwater runoff. This includes installing a new, durable 36-inch-diameter pipe beneath Burma Road; replacing an existing and deteriorating 36-inch-diameter plastic pipe located south of Palos Verdes Drive South with a 60-inch-thick wall or HDPE pipe; and refurbishing an existing 60-inch-diameter pipe beneath Palos Verdes Drive South. The proposed project would improve existing on-site stormwater collection and conveyance infrastructure in order to better manage stormwater flows and reduce the rate surface runoff in a manner that would in turn reduce on- and off-site flooding. Therefore, impacts would be less than significant. No mitigation is required.

Threshold 4.9.3.iii: Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact.

Construction. Construction of the proposed project has the potential to exceed the capacity of existing stormwater drainage systems and introduce pollutants into stormwater that percolates

into the ground or flows into the Pacific Ocean due to erosion, siltation, and accidental spills of hazardous materials. However, as specified in RCM WQ-1, the Construction General Permit requires preparation of a SWPPP and the Hydrology Report has specified preparation of an Erosion Control Plan. The SWPPP and Erosion Control Plan would detail construction BMPs that would be sized to manage excess stormwater runoff during construction activities and target pollutants of concern in stormwater runoff to prevent substantial additional sources of polluted runoff being discharged from the project site. With implementation of RCM WQ-1, construction impacts related to creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Operation. As discussed above, stormwater will surface flow into an engineered swale and then discharge to a flow-reduction area, which would be appropriately sized to manage the flow of excess stormwater runoff. Flow from the flow reduction area would be released gradually into a 60-inch pipe and discharged into the Pacific Ocean. In addition, the proposed project includes the installation, refurbishment, and replacement of underground piping throughout the project site to properly collect and convey stormwater runoff near Palos Verdes Drive South and into the Pacific Ocean. The proposed engineered swale, flow reduction area, and piping have all been sized to collect and convey projected stormwater runoff. Additionally, compliance with RCM WQ-3, which requires the implementation of BMPs to reduce pollutants of concern in stormwater runoff in compliance with the Los Angeles County MS4 Permit, would ensure that the proposed project does not discharge of polluted runoff. Therefore, the proposed project would not create or contribute stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant. No mitigation is required.

Threshold 4.9.3.iv: Would the project impede or redirect flood flows?

According to FEMA FIRM Nos. 06037C1940F (September 26, 2008) and 06037C2026G (April 21, 2021), the project area is not located within a 100-year floodplain. The project area is located entirely within FEMA Zone X, which is defined by FEMA as an area outside the 500-year floodplain. The edge of the project site that borders the Pacific Ocean is located within Zone VE. Zone VE is defined as coastal areas with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves (FEMA 2008, 2021).

Therefore, due to the low flood risk and the proposed improvements to existing drainage infrastructure and conditions, the proposed project would improve existing drainage conditions on site, which would reduce the potential for on-site flooding. Therefore, the proposed project would not impede or redirect flood flows, and no impacts would occur.

Threshold 4.8.4 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The project is within the jurisdiction of the Los Angeles RWQCB. The Los Angeles RWQCB adopted its Water Quality Control Plan (i.e., Basin Plan) in 2019. This Basin Plan designates beneficial uses for all surface and groundwater within the jurisdiction and establishes the

water quality objectives and standards necessary to protect those beneficial uses. The proposed project would comply with the Construction General Permit and Los Angeles County MS4 Permit, which requires preparation of a SWPPP, preparation of LID BMPs, and implementation of construction and operational BMPs to reduce pollutants of concern in stormwater runoff (as specified in **RCM WQ-1** through **RCM WQ-4**). As such, the project would not result in water quality impacts that would conflict with the Los Angeles RWQCB Water Quality Control Plan (Basin Plan), and impacts related to conflict with a water quality control plan would be less than significant.

The California SGMA was enacted in September 2014. SGMA established a framework of priorities and requirements to facilitate sustainable groundwater management throughout the State. The intent of SGMA is for groundwater to be managed by local public agencies (e.g., water districts and irrigation districts) and newly formed GSAs to ensure that a groundwater basin is operated within its sustainable yield (no long-term overdraft) through the development and implementation of GSPs. The City partially overlays the West Coast Subbasin of the Los Angeles Coastal Plain Groundwater Basin. The Coastal Plain of Los Angeles – West Coast groundwater basin is designated as a Very Low priority basin (SQMA 2020). Therefore, no groundwater sustainability plan has been established for this basin. Furthermore, the project site is outside the boundaries of the subbasin. Because there is not an adopted Groundwater Sustainability Plan applicable to the groundwater basin and the proposed project is outside the boundaries of a groundwater basin, the proposed project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, the proposed project would not conflict with or obstruct implementation of the Los Angeles RWQCB Water Quality Control Plan (Basin Plan) or a sustainable groundwater management plan, and impacts would be less than significant. No mitigation is required.

4.9.7 Level of Significance Prior to Mitigation

Construction and operational impacts related to hydrology and water quality would be less than significant. No mitigation measures are required.

4.9.8 Regulatory Compliance Measures and Mitigation Measures

4.9.8.1 Regulatory Compliance Measures

The proposed project would comply with the following Regulatory Compliance Measures (RCMs).

RCM WQ-1 Construction General Permit. Prior to commencement of construction activities, the Project Applicant (City) shall obtain coverage under the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit), NPDES No. CAS000002, Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ Order No. 2012-0006-DWQ, and Order No. 2022-0057-DWQ or any other subsequent permit. This shall include submission of Permit Registration Documents (PRDs), including permit application fees, a Notice of Intent (NOI), a risk assessment, a site plan, a Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and any other compliance-related documents required by the permit, to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not

commence until a Waste Discharge Identification Number (WDID) is obtained for the proposed project from SMARTS and provided to the City of Rancho Palos Verdes (City) Engineer/Public Works Director, or designee, to demonstrate that coverage under the Construction General Permit has been obtained. Project construction shall comply with all applicable requirements specified in the Construction General Permit, including, but not limited to: preparation of a SWPPP and implementation of construction site best management practices (BMPs) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the proposed project. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and shall include BMPs (e.g., soil binders, straw mulch, nonvegetative stabilization, fiber rolls, sandbag barriers, straw bale barriers, a stabilized construction entrance/exit, a stabilized construction roadway, and an entrance/outlet tire wash) to control the pollutants in stormwater runoff. Upon completion of construction activities and stabilization of the project site, a Notice of Termination (NOT) shall be submitted via SMARTS.

- RCM WQ-2** **Los Angeles County Groundwater Permit.** At least 45 days prior to groundwater dewatering activities, the City shall submit an NOI to the Los Angeles Regional Water Quality Control Board (RWQCB) to obtain coverage under the *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties* (Groundwater Discharge Permit), Order No. R4-2018-0125, NPDES No. CAG994004. The construction contractor shall comply with the requirements of Order No. R4-2018-0125, NPDES No. CAG994004. Groundwater dewatering activities shall comply with all applicable provisions in the Groundwater Discharge Permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a NOT shall be submitted to the Los Angeles RWQCB.
- RCM WQ-3** **Los Angeles MS4 Permit.** During final design, the City shall ensure that the proposed project complies with the requirements of *The Waste Discharge Requirements and NPDES Permit for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties, Order R4-2021-0105 NPDES NO. CA004004.*
- RCM WQ-4** **Preparation of Final Hydrology and Water Resources Technical Report (Hydrology Report).** Prior to issuance of a grading permit, the Project Proponent shall submit Final Hydrology and Water Resources Technical Report to the City Engineer/Public Works Director, or designee, and the Los Angeles County Flood Control District for review and approval.

4.9.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.9.9 Level of Significance after Mitigation

Construction and operational impacts related to hydrology and water quality would be less than significant. No mitigation is required.

4.9.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for hydrology and water quality. The cumulative impact area for hydrology and water quality for the proposed project is the South Santa Monica Watershed.

New development and redevelopment can result in increased stormwater runoff and increased urban pollutants in stormwater runoff from project sites. Each related project must include BMPs to reduce impacts to water quality and hydrology in compliance with local ordinances and plans adopted to comply with requirements of the various NPDES permits. Specifically, all projects must comply with the requirements of the Construction General Permit (if it disturbs 1 acre or more of soil during construction), the Los Angeles County MS4 Permit, and the City of Rancho Palos Verdes Municipal Code. The preparation, approval, and implementation of a SWPPP (for construction) and project-specific stormwater control measures and LID measures (for operation) would be required for each related project to minimize water quality impacts. In addition, the stormwater control measures would be required to determine the stormwater controls required to minimize increases in runoff from each site so they do not exceed regulatory requirements or exceed the capacity of downstream storm drain systems. In addition, the City's Public Works Department reviews all development projects on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available.

Each related project must consider impaired receiving waters and TMDLs for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of water bodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, a project's contribution to overall water quality improvement in the South Santa Monica Watershed in the context of the regulatory program is designed to account for cumulative impacts.

Regional programs and BMPs, such as TMDL programs and the MS4 Permit Program, have been designed to contemplate and address the cumulative effects of proposed development. The proposed project would be required to comply with the requirements of the Construction General Permit and the Los Angeles County MS4 Permit and implement construction and operational BMPs pursuant to approved SWPPP and the stormwater control/LID measures to reduce pollutants in stormwater runoff. Compliance with these regional programs and permits constitutes compliance with programs intended to address cumulative water quality impacts. As stated above, each related

project would be required to develop a SWPPP and stormwater pollution control/LID measures, and would be evaluated individually to determine appropriate BMPs and treatment measures to reduce impacts to surface water quality and hydrology. Because the proposed project and other related projects would comply with applicable NPDES and City requirements and would include BMPs to reduce the volume of stormwater runoff and pollutants of concern in stormwater runoff, the cumulative hydrology and water quality impacts of the proposed project and related projects would be less than significant. Therefore, the proposed project's incremental hydrology and water quality impacts would not be cumulatively considerable.

4.10 LAND USE AND PLANNING

This section analyzes the existing land uses on the project site and in its vicinity, as well as the consistency of the proposed Portuguese Bend Landslide Remediation Project (proposed project) with surrounding land uses and the relevant policy and planning documents. Information presented in this section is based on information provided in the City of Rancho Palos Verdes (City) General Plan (2018), the City's Natural Communities Conservation Plan and Habitat Conservation Plan (NCCP/HCP), and the City's Zoning Ordinance (October 8, 2022).

4.10.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there were notes generated from the scoping session. For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). One of the comment letters included comments related to land use and planning.

- The comment by Ken Dyda received on January 3, 2021, asks what land uses other than the road and open space that currently exist would be impacted by the proposed project.

4.10.2 Methodology

The analysis contained in this section considers the physical effects of the proposed project related to land use compatibility and considers whether or not there are any potential inconsistencies of the proposed landslide remediation project with City planning documents, (e.g., the City of Rancho Palos Verdes General Plan, Land Use and Conservation and Open Space Elements, and the City of Rancho Palos Verdes Zoning Code, Title 17). Regulations and policies from the City's General Plan are also discussed in applicable topical sections of the EIR, where policies related to physical effects are addressed.

The consistency analysis presented in this section was prepared in compliance with *State California Environmental Quality Act (CEQA) Guidelines* Section 15125(d). The purpose of the required analysis is to identify potential inconsistencies between the proposed project and applicable general plans and regional plans. Neither CEQA nor the *State CEQA Guidelines* set forth standards for determining when a project is inconsistent with an applicable plan, but the final determination that a project is consistent or inconsistent with an applicable plan should be made by the Lead Agency when it acts on the project. Using the methodology described below, the analysis in this EIR presents the findings of policy review and is intended to provide a guide to decision-makers for policy interpretation.

A project's inconsistency with a policy is only considered significant if such an inconsistency would cause significant physical environmental impacts (per *State CEQA Guidelines* Section 15382). This section determines whether any project inconsistencies with public land use policies and documents would be significant and whether mitigation is feasible. Under this approach, a policy conflict is not in and of itself considered to be a significant environmental impact. An inconsistency between a proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse. Conversely, plan consistency may also indicate that a potential environmental impact is less than significant.

4.10.3 Existing Environmental Setting

The project site is located along the south section of the Palos Verdes Peninsula within Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the Portuguese Bend Landslide (PBL), is the Pacific Ocean, as shown on **Figure 1, Project Site Location**. The proposed project consists of approximately 206 acres within the landslide complex (project site). However, the overall area of land that contributes to the landslide instability is much larger, at approximately 750 acres (Diblee 1999; Douglas 2013; Geo-Logic Associates 2019; Ninyo & Moore 2022). The project site includes approximately 104 acres of land within the City-owned Palos Verdes Nature Preserve (Preserve), specifically within the Portuguese Bend and Abalone Cove Reserves, as shown on **Figure 2, Palos Verdes Nature Preserve Areas**. The Preserve is managed by the Palos Verdes Peninsula Land Conservancy (PVPLC) pursuant to the City Council-adopted NCCP/HCP.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist approximately 0.15 mile west of the northwestern boundary of the project site.

Public trails within the Preserve are located on the eastern side of the project site and on the seaward side of Palos Verdes Drive South. One park is located within the project site boundaries, Abalone Cove Park and Reserve, which also contains a State Ecological Preserve.

Vegetation consists of Saltbush Scrub, Coastal Sage Scrub (Undifferentiated), Coastal Sage Scrub (*Rhus* Dominated), Exotic Woodland, and Disturbed Vegetation. Due to the land movement, surface fractures exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South.

4.10.4 Regulatory Setting

4.10.4.1 Federal Regulations

There are no federal land use policies or regulations that are applicable to the proposed project with respect to land use regulation.

4.10.4.2 State Regulations

There are no State land use policies or regulations that are applicable to the proposed project with respect to land use regulation.

4.10.4.3 Regional Regulations

Natural Communities Conservation Plan and Habitat Conservation Plan. The consistency analysis of the proposed project with the NCCP/HCP is provided in Section 4.3, Biological Resources.

4.10.4.4 Local Regulations

The City has preeminent authority over deciding the land uses on the site. The adopted planning documents regulating land use within and around the project site are the City's General Plan, Zoning Code, and Coastal Specific Plan. The following paragraphs explain the City's regulations, plans, and policies applicable to the site.

City of Rancho Palos Verdes General Plan. The City of Rancho Palos Verdes General Plan was originally approved and adopted by the City Council on June 26, 1975. In September 2018, the General Plan was comprehensively updated. The current General Plan consists of the Circulation Element, Conservation and Open Space Element, Social Services Element, Fiscal Element, Land Use Element, Noise Element, Safety Element, and Visual Resources Element. Each of these General Plan Elements and the relevant goals and policies related to land use and planning are briefly described below.

- **Circulation Element:** The Circulation Element guides the planning of the transportation system that would be developed to serve the current and future population of the City. The purpose of this element is to present a plan to ensure that utilities and transportation are constantly available to permit growth and promote public health, safety, and welfare. This element provides an areawide assessment of the different public transit, services, and utilities for a broader understanding of service provision. There are no goals and policies from the Circulation Element that are applicable to land use and planning for the proposed project.
- **Conservation and Open Space Element:** The primary objective of the Conservation and Open Space Element is to provide a discussion of the basic ecological and environmental units dealing with the natural factors of land, climate, hydrology, biotic resources, geotechnical factors, as well as the systematic relationships that must exist among them. The element discusses these environmental units as they apply individually to Rancho Palos Verdes and in combination with the preservation of natural resources and open space and of public health and safety. The project site includes approximately 104 acres of land located within the City-owned Preserve, specifically within the Portuguese Bend and Abalone Cove Reserves, as shown on **Figure 2, Palos Verdes Nature Preserve Areas**. The Preserve is managed by the PVPLC, pursuant to the City Council-adopted NCCP/HCP. The following goal and policies from the Conservation and Open Space Element are applicable to land use and planning for the proposed project:
 - **Goal 3:** To protect the environment by reducing environmental hazards in the community.
 - **Policy 6:** Prohibit activities that create excessive silt, pollutant runoff, increase canyon-wall erosion, or potential for landslide within Resource Management Districts containing hydrologic factors (RM 6).
 - **Policy 10:** Stringently regulate irrigation, natural drainage, and other water-related considerations in new developments and existing uses affecting existing or potential slide areas.
 - **Policy 16:** Implement the Rancho Palos Verdes NCCP/HCP.

- **Policy 26:** Make every effort to preserve or restore natural hydrology when projects impact canyons or other natural drainage areas when such efforts do not conflict with public safety.
- **Policy 27:** Ensure the maximum preservation of the natural scenic character and topography of the City consistent with reasonable economic uses.
- **Social Services Element:** The Social Services Element serves as a guide for the physical development of Rancho Palos Verdes and is intended to assist elected and appointed officials in the decision-making process. This element also provides direction to City Staff, developers, and the general public to ensure that social factors be considered during the planning and development process. There are no goals and policies from the Social Services Element that are applicable to land use and planning for the proposed project.
- **Fiscal Element:** The Fiscal Element establishes the policy framework necessary to guide all of the City's short- and long-term fiscal decisions, and it serves as a planning document to assist in making fiscal decisions from a comprehensive perspective. There are no goals and policies from the Fiscal Element that are applicable to land use and planning for the proposed project.
- **Land Use Element:** The Land Use Element designates the proposed location and extent of the uses of land for housing, business, industry, and open space, including agriculture, natural resources, recreation, scenic beauty, education, public buildings and grounds, and other categories of public and private uses of land. Various portions of the approximately 206-acre project site have different land use designations, including Residential, Open Space, Open Space-Preservation, and Open Space-Hazard (OH) according to the General Plan Land Use Map. The project site is primarily zoned as Open Space-Hazard (OH), with a portion zoned as Residential Single Family - Lot Less Than 20,000 Square Feet (RS-2) on the southeast portion of the site. The following goal and policies from the Land Use Element are applicable to land use and planning for the proposed project:
 - **Goal 9:** Control the alteration of natural terrain.
 - **Policy 26:** Encourage the mitigation of the adverse aesthetic impacts of utility facilities.
 - **Policy 30:** All land with an Open Space Preserve Land Use Designation shall be used in compliance with the City's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP).
- **Noise Element:** The Noise Element is intended to identify existing and potential future sources of noise within the community, as well as strategies to limit the exposure of the community to excessive noise levels. There are no goals and policies from the Noise Element that are applicable to land use and planning for the proposed project.
- **Safety Element:** The Safety Element provides goals and policies to reduce risk and prevent loss from future natural hazard events within Rancho Palos Verdes. This element addresses wildfire hazards, flood hazards, geologic hazards, and other hazards. As discussed in Section 3.0, Project Description, the project site is located within the PBL complex, which is one of the largest

continuously active landslides in the United States. The following goals and policy from the Safety Element are applicable to land use and planning for the proposed project:

- **Goal 1:** Provide for the protection of life and property from both natural and human-made hazards within the community.
- **Goal 4:** Protect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.
- **Policy 34:** Continue to support the preservation of natural resources and open spaces throughout the City.
- **Visual Resources Element:** The goals and policies of the Visual Resources Element are intended to be a guide for ensuring the continued preservation, restoration, and enhancement of significant visual resources within Rancho Palos Verdes. There are no goals and policies from the Visual Resources Element that are applicable to land use and planning for the proposed project.
- **Housing Element:** The Housing Element provides a roadmap for the City to address current and projected housing needs during the 2021–2029 Housing Element planning period. The purpose of the Housing Element is to provide a plan to meet the existing and projected housing needs of all segments of the population, including lower-income households and households and individuals with special housing needs. There are no goals and policies from the Housing Element that are applicable to land use and planning for the proposed project.

City of Rancho Palos Verdes Zoning Code. Title 17, Zoning, of the City’s Municipal Code defines land use categories, boundaries, and development standards for various land uses in Rancho Palos Verdes.

The project site is zoned as Open Space-Hazard (OH), with a portion zoned as Residential Single Family. Portions of the project site are also located in the City’s OC-1 Natural Design Overlay Control District to the southeast and OC-3 Urban Design Overlay Control District to the southwest and southeast. The purpose of the Open Space-Hazard zone is to prevent unsafe development of hazardous areas that must be preserved or regulated for public health and safety purposes. The proposed project would not involve any discretionary actions related to the existing zoning on the project site, and uses on the site would remain compatible after completion of the proposed project.

City of Rancho Palos Verdes Municipal Code. The following City of Rancho Palos Verdes Municipal Code sections are relevant to land use and planning:

- **Section 17.02.020, Uses and Development Permitted:** Defines the uses and developments that are allowable under the various residential zoning district.
- **Section 17.02.030, Development Standards:** Defines development standards that apply to all land and structures in residential districts.

- **Chapter 17.32, Open Space-Hazard (OH) District:** Establishes the purposes for having the Open Space-Hazard (OH) District, and defines permitted uses and development.
- **Chapter 17.34, Open Space-Recreational (OR) District:** Establishes the purposes for having the Open Space-Recreational (OR) District and defines permitted uses and development.
- **Section 17.40.040, Natural Overlay Control District (OC-1) and Regulations:** Establishes the purpose for the Natural Overlay Control District (OC-1) and defines regulations and permitted performance criteria for the maintenance of these districts.
- **Chapter 17.72, Coastal Permits:** Defines the uses and developments that are permitted or exempted from obtaining coastal permits to determine conformity with the City's Coastal Specific Plan.
- **Section 17.76.040, Grading Permit:** Establishes regulations for when grading is allowable or exempt and describes the process for obtaining a grading permit.

Natural Community Conservation Plan/Habitat Conservation Plan. In accordance with the NCCP Act (California Fish and Game Code Section 2800, et seq.), the City of Rancho Palos Verdes has developed an NCCP/HCP proposal that encompasses the entire city with the CDFW. As the lead agency of the Palos Verdes Peninsula NCCP, the City developed a Phase I Peninsula NCCP Program to allow the City and wildlife agencies to make informed land-use and conservation decisions in developing the plan. The City's NCCP/HCP has been prepared to maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within Rancho Palos Verdes, and it is discussed further in Section 4.3, Biological Resources.

Coastal Specific Plan. IN 1975, the City of Rancho Palos Verdes adopted a Coastal Specific Plan after its incorporation on September 7, 1973, to permit further study of the sensitive coastline. The plan consists of the following: Natural Environment Element, Socio/Cultural Element, Urban Environment Element, Corridors Element, and Fiscal Element. Among the purposes of the plan are the objectives to address bluff stability for areas that are geologically unstable, biological resources for the continued existence and quality of terrestrial and marine habitats, and limitations of infrastructural systems due to the City's location.

Landslide Moratorium Code. In accordance with the City of Rancho Palos Verdes Municipal Code, development within the City's Landslide Moratorium Area is prohibited unless an Exception or Exemption permit is obtained by the City. It was determined that from a geologic and geotechnical perspective, the City should prohibit construction on vacant lots within the entire Landslide Moratorium Area, although it is also noted that it is not detrimental to the Landslide Moratorium Area to continue to allow current residents to add minor square footage and improvements to their existing homes and to allow new construction in Zone 2.

4.10.5 Thresholds of Significance

The thresholds for land use and planning impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to land use and planning if it would:

Threshold 4.10.1: Physically divide an established community; or

Threshold 4.10.2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The IS, included as Appendix A, substantiates that there would be no impact associated with Threshold 4.10.1 as the proposed project would control the existing Rancho Palos Verdes Landslide Complex area and would not construct any buildings or structures that could potentially divide an established community. The project would not physically divide an established community. This threshold will not be addressed in the following analysis.

4.10.6 Project Impacts

Threshold 4.10.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. Several regionally and locally adopted land use plans, policies, and regulations would be applicable to development of the proposed project, including the City of Rancho Palos Verdes General Plan, the Coastal Specific Plan, the City of Rancho Palos Verdes Zoning Code, and the Palos Verdes Peninsula NCCP/HCP.

City of Rancho Palos Verdes General Plan. The existing General Plan land use designation for the project site is Residential (1–2 dwelling unit per acre) and Open Space to the north, east, west, and southeast; and Open Space Preservation (OSP) and Open Space-Hazard (OH) to the south and southwest. According to the City’s Land Use Element, the Residential (1–2 dwelling unit per acre) land use designation has low and moderate physical and social constraints which could be controlled through subdivision design. The Open Space Preservation land use designation consists of the City’s Preserve, which has been acquired by the City as permanent open space and is managed by the PVPLC. The purpose of these lands is to provide permanent open space buffers within the community, to protect sensitive plant and animal communities, and to provide opportunity for passive recreational uses that are compatible with this purpose. The Open Space Hazard land use designation is maintained as open space with very light intensity uses permitted, such as agriculture and passive recreational activities, for the protection of public health, safety, and welfare. Because the proposed project does not consist of any new development and will not result in changes to the existing uses on the project site, the land uses would remain consistent with these designations, and no General Plan Amendment would be required to implement the proposed project.

The City of Rancho Palos Verdes General Plan also contains goals and policies that are considered applicable to the proposed project. These goals and policies are discussed in Table 4.10.A, General Plan and Coastal Specific Plan Consistency Analysis, and a consistency analysis is provided for each applicable General Plan goal and policy. Goals and policies that are not applicable to the proposed project are not included in this table. This discussion is intended to provide a guide to decision makers for policy interpretation. As identified through this consistency analysis, the proposed project would not conflict with any applicable General Plan land use plan, policy, or regulation adopted by the City for the purpose of avoiding or mitigating an environmental impact.

Coastal Specific Plan. As previously stated, among the purposes of the Coastal Specific Plan are the objectives to address bluff stability for areas that are geologically unstable, biological resources for the continued existence and quality of terrestrial and marine habitats, and limitations of infrastructural systems due to the City's location. The Coastal Specific Plan contains policies that are considered applicable to the proposed project. These goals and policies are discussed in Table 4.10.A, General Plan and Coastal Specific Plan Consistency Analysis, and a consistency analysis is provided for each applicable General Plan goal and policy. Goals and policies that are not applicable to the proposed project are not included in this table. As identified through this consistency analysis, the proposed project would not conflict with any applicable Coastal Specific Plan policy for the purpose of avoiding or mitigating an environmental impact.

City of Rancho Palos Verdes Municipal Code. As previously stated, the site is zoned as Open Space-Hazard (OH), with a portion zoned as Residential Single Family. The purpose of the Open Space-Hazard (OH) zone is to prevent unsafe development of hazardous areas that must be preserved or regulated for public health and safety purposes. The improvements associated with the proposed project are being recommended to address an existing hazard and the project components are consistent with the Open Space – Hazard zoning category. The proposed project would require several discretionary actions related to implementation of the proposed project. To ensure compliance with Chapter 15.20, Chapter 17.72, and Section 17.76.040 of the City's Municipal Code, a grading permit for proposed grading that would be necessary for the proposed project improvements, and a coastal permit prior to construction.

The proposed project would minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface. The project does not include development within the Landslide Moratorium Area and is being constructed to minimize landslide risk and enhance public safety as allowed per Exception E (RPVMC 15.20.040(E)); therefore, the project remains consistent with the Landslide Moratorium Ordinance. For the reasons discussed above, the proposed project would result in less than significant impacts related to potential conflicts with applicable land use plans, policies, and regulations, and no mitigation is required.

Table 4.10.A: General Plan and Coastal Specific Plan Policy Consistency Analysis

Policies	Consistency Analysis
General Plan	
<i>Open Space and Conservation Element</i>	
<p>Goal 3: To protect the environment by reducing environmental hazards in the community.</p>	<p>Consistent. The proposed project would minimize the existing landslide area by implementing a series of geotechnical engineering solutions that would substantially reduce the risk of damage to public and private property and allow for significant improvements to roadway and infrastructure, safety, and stability projects. The project would also reduce substantial sediments and associated pollutants into the Pacific Ocean that contribute to negative impacts on the coastal and marine environments. Therefore, the proposed project would be consistent with Open Space and Conservation Goal 3.</p>
<p>Policy 6: Prohibit activities that create excessive silt, pollutant runoff, increase canyon-wall erosion, or potential for landslide within Resource Management Districts containing hydrologic factors (RM 6).</p>	<p>Consistent. The proposed project would alleviate artesian water pressure below the Portuguese Bend Landslide area, which is believed to be a major contributing factor to land movement. The proposed project also includes filling of surface fractures and controlling major surface water runoff, both of which would reduce the potential for continued land movement. It would also install new surface water improvements and refurbish existing pipes to minimize soil erosion loss. Therefore, the project would not involve activities that create excessive silt or pollution runoff, or increase canyon-wall erosion or potential for landslide; rather, it would actively work to reduce erosion and lands movement. Therefore, the proposed project would be consistent with Open Space and Conservation Policy 6.</p>
<p>Policy 10: Stringently regulate irrigation, natural drainage, and other water-related considerations in new developments and existing uses affecting existing or potential slide areas.</p>	<p>Consistent. The proposed project would minimize movement in the existing landslide area and employ three geotechnical engineering solutions to relieve artesian pressure below the landslide basal surface and minimize stormwater infiltration into subsurface. These methods include surface fracture infilling to control stormwater runoff infiltrating the ground; utilizing drainage swales, flow reduction areas, and underground pipe improvements to minimize stormwater ponding and infiltration; and installing groundwater extraction pipes, or “hydraugers,” to alleviate artesian water pressure below the PBL. Therefore, the proposed project would be consistent with Open Space and Conservation Policy 10.</p>
<p>Policy 16: Implement the Rancho Palos Verdes NCCP/HCP.</p>	<p>Consistent. The proposed project designs will be consistent with restoration requirements outlined in the City’s NCCP/HCP and other resource/regulatory review requirements. Therefore, the proposed project would be consistent with Open Space and Conservation Policy 16.</p>
<p>Policy 26: Make every effort to preserve or restore natural hydrology when projects impact canyons or other natural drainage areas when such efforts do not conflict with public safety.</p>	<p>Consistent. As indicated above, the proposed project would ultimately minimize landslide movement in the PBL area, and the methods that would be used to achieve this goal would remain consistent with the natural visual characteristics of the surrounding Preserve. Therefore, the proposed project would be consistent with Open Space and Conservation Policy 26.</p>
<p>Policy 27: Ensure the maximum preservation of the natural scenic character and topography of the City consistent with reasonable economic uses.</p>	<p>Consistent. As discussed above, the proposed project would select components that are consistent with the natural visual characteristics of the surrounding Preserve. The surface swales would be designed to be visually complementary to the surrounding setting of the Preserve and lined with context-sensitive vegetation instead of concrete. Additionally, the aboveground tank options for the subsurface drainage system (“hydraugers”) can be painted in color schemes that are visually complementary to the surrounding setting of the Preserve. Therefore, the proposed project would be consistent with Open Space and Conservation Policy 27.</p>

Table 4.10.A: General Plan and Coastal Specific Plan Policy Consistency Analysis

Policies	Consistency Analysis
Land Use Element	
<p>Goal 9: Control the alteration of natural terrain.</p>	<p>Consistent. The proposed project would reduce the likelihood of major landslide movement that would damage and render Palos Verdes Drive South unusable. The geotechnical solutions proposed for the project are consistent with the natural visual characteristics of the surrounding Preserve and would help prevent additional landslide movement and control the alteration of the natural terrain. Therefore, the proposed project would be consistent with Land Use Element Goal 9.</p>
<p>Policy 26: Encourage the mitigation of the adverse aesthetic impacts of utility facilities.</p>	<p>Consistent. As discussed above, the proposed project would select remedy components for the geotechnical solutions that are consistent with the natural visual characteristics of the surrounding Preserve. The surface swales would be designed to be visually complementary to the surrounding setting of the Preserve and lined with context-sensitive vegetation instead of concrete. Additionally, the aboveground tank options for the subsurface drainage system (“hydraugers”) can be painted in color schemes that are visually complementary to the surrounding setting of the Preserve. Therefore, the proposed project would be consistent with Land Use Element Policy 26.</p>
<p>Policy 30: All land with an Open Space Preserve Land Use Designation shall be used in compliance with the City’s Natural Community Conservation Plan / Habitat Conservation Plan (NCCP/HCP).</p>	<p>Consistent. As discussed above, the proposed project designs will be consistent with the restoration requirements outlined in the City’s NCCP/HCP and other resource/regulatory review requirements. Project implementation would help preserve overall biological resource values by controlling land movement and thereby preserving existing habitat values on the project site. Therefore, the proposed project would be consistent with Land Use Element Policy 30.</p>
Safety Element	
<p>Goal 1: Provide for the protection of life and property from both natural and human-made hazards within the community.</p>	<p>Consistent. As discussed above, the proposed project would minimize the existing landslide area by implementing a series of geotechnical engineering solutions that would substantially reduce the risk of damage to public and private property and allow for significant improvements to roadway and infrastructure, safety, and stability projects. By reducing the likelihood of major landslide movement, the proposed project would reduce substantial human health risks and improve public safety. Therefore, the proposed project would be consistent with Safety Element Goal 1.</p>
<p>Goal 4: Protect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.</p>	<p>Consistent. As discussed above, the proposed project would reduce substantial human health risk and improve public safety; reduce the likelihood of major landslide movement that would damage and render a major arterial street (Palos Verdes Drive South) unusable; and reduce the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts. Therefore, the proposed project would be consistent with Safety Element Goal 4.</p>
<p>Policy 34: Continue to support the preservation of natural resources and open spaces throughout the City.</p>	<p>Consistent. By minimizing landslide movement, the proposed project would preserve natural vegetation and recreational facilities within the Preserve. The surface swales would be designed to be visually complementary to the surrounding setting of the Preserve and lined with context-sensitive vegetation instead of concrete. Therefore, the proposed project would be consistent with Safety Element Policy 34.</p>

Table 4.10.A: General Plan and Coastal Specific Plan Policy Consistency Analysis

Policies	Consistency Analysis
Coastal Specific Plan	
Natural Environmental Element	
<p>Policy 15: Provide mitigating measures where possible to control surface runoff that might be degrading to the natural environment.</p>	<p>Consistent. As indicated above, the proposed project would alleviate artesian water pressure below the PBL area, which is believed to be a major contributing factor to land movement. The proposed project also includes filling of surface fractures and controlling major surface water runoff, both of which would reduce the potential for continued land movement. It would also install new surface water improvements and refurbish existing pipes to minimize soil erosion loss. Therefore, the project would effectively provide mitigation measures to control surface runoff that might be degrading the natural environment. Therefore, the proposed project would be consistent with Natural Environmental Element Policy 15.</p>
<p>Policy 18: Support and encourage site and structural designs which respond to climatic site conditions.</p>	<p>Consistent. As indicated above, the proposed project would reduce the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts. The project involves a structural design that would respond to the climatic conditions on the site. Therefore, the proposed project would be consistent with Natural Environmental Element Policy 18.</p>
Subregion 5	
<p>Policy 1: Ensure that flood control improvements within Subregion 5 are carried out in a manner that is consistent with applicable General Plan and Coastal Specific Plan policies regarding preservation of natural habitats, visual character, and flood control.</p>	<p>Consistent. The proposed project site is within Subregion 5 in the Coastal Specific Plan. The proposed project consists of geotechnical engineering solutions that are environmentally sensitive, will substantially reduce the risk of damage to public and private property, and would allow for the significant improvements of roadway and infrastructure, safety, and stability projects. As demonstrated in this table and throughout this document, the proposed project would be consistent with the City’s General Plan and Coastal Specific Plan policies regarding the preservation of natural habitats, visual character, and flood control.</p>

Sources: City of Rancho Palos Verdes General Plan, as amended.
 Rancho Palos Verdes Coastal Specific Plan.

City = City of Rancho Palos Verdes
 NCCP/HCP = Natural Communities Conservation Plan/Habitat Conservation Plan
 PBL = Portuguese Bend Landslide
 Preserve = Palos Verdes Nature Preserve

4.10.7 Level of Significance Prior to Mitigation

There would be no potentially significant impacts related to land use and planning.

4.10.8 Regulatory Compliance Measures and Mitigation Measures

4.10.8.1 Regulatory Compliance Measures

No regulatory compliance measures are required for the proposed project.

4.10.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.10.9 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to land use and planning. No mitigation would be required.

4.10.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use and planning. The cumulative impact area for land use and planning related to the proposed project is the service area. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing utilities and service systems and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.10.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to land use and planning. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to land use and planning particularly hazards. With compliance with these regulations, impacts related to land use and planning would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to land use and planning.

4.11 NOISE

This section evaluates the potential short-term and long-term noise impacts associated with the construction and maintenance of the Portuguese Bend Landslide Remediation Project (proposed project). This section is based on information provided in the *Noise Impact Analysis for the Proposed Portuguese Bend Landslide Remediation Project in Rancho Palos Verdes* (Vista Environmental 2023), which is provided in Appendix G of this Draft Environmental Impact Report (EIR).

4.11.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there are public comments received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Four of the comment letters included comments related to noise. The NOP comments raised the following issues:

- The United States Fish and Wildlife Service and California Department of Fish and Wildlife stated in their comment letter that issue areas in the Draft EIR that may be influenced by the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) include “noise.”
- An unknown commenter asked what data is there to demonstrate that noise impacts will not have adverse impacts on protected species.
- George Fotion inquired regarding noise impacts on adjacent residences.
- Ken Dyda asked if construction noise would exceed City standards.

4.11.2 Methodology

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad-frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear.

Evaluation of noise impacts associated with the proposed project includes the following:

- Determination of the short-term construction noise levels at off-site noise-sensitive uses and comparison to the City’s Noise Ordinance requirements.
- Determination of the long-term noise levels from vehicular traffic using the Federal Highway Administration (FHWA) approved method and from on-site stationary sources using empirical noise data obtained in field measurements, as well as their impact at on- and off-site noise-

sensitive uses, and comparison of these levels to the City's pertinent noise standards in the City of Rancho Palos Verdes General Plan Noise Element (City of Rancho Palos Verdes 2018c) and Noise Ordinance (City of Rancho Palos Verdes 2020).

- Determination of the required mitigation measures (if any) to reduce on-site noise levels and short-term construction-related noise impacts.

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors, where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

The evaluation of noise and vibration impacts was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the City of Rancho Palos Verdes Noise Element and Municipal Code. The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was used to determine traffic noise impacts. On-site stationary-source noise levels were also evaluated. Ground-borne vibration levels associated with construction-related activities for the project were evaluated utilizing typical ground-borne vibration levels associated with construction equipment obtained from the California Department of Transportation (Caltrans) guidelines set forth above. Please refer to the Roadway Construction Noise Model (RCNM) Version 1.1 printouts provided in Appendix C of the *Noise Impact Analysis Portuguese Bend Landslide Remediation Project in Rancho Palos Verdes* (Vista 2022) (Appendix G) for additional details on the noise and vibration modeling methodology and assumptions used to estimate the construction and operation impacts of the proposed project. The RCNM model printouts are provided in Appendix C of the Noise Impact Analysis (Appendix G).

4.11.2.1 Noise Descriptors

Noise equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels. The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by Caltrans for all traffic noise impact analyses.

The day-night average level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 10 dB to sound levels at night between 10:00 p.m. and 7:00 a.m. The Community Noise Equivalent Level (CNEL) is similar to the L_{dn} except that it has an added 4.77 dB to sound levels during the evening hours between 7:00 p.m. and 10:00 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels that creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is

weighted accordingly. The City of Rancho Palos Verdes relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

4.11.2.2 Tone Noise

A pure-tone noise is a noise produced at a single frequency. Laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources.

4.11.2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, as well as ground absorption, atmospheric effects and refraction, and shielding by natural and man-made features. Sound from point sources, such as air-conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

4.11.2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone, and very hard-packed earth. For line sources, a 4.5 dBA/DD drop-off rate is typically observed for soft-site conditions, compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the FHWA traffic noise prediction model used in this analysis, as most ground surfaces between the source and receptor will provide some noise absorption.

4.11.2.5 Vibration Descriptors

Several different methods are used to quantify vibration amplitude, including the maximum instantaneous peak in the vibration velocity, which is known as the peak particle velocity (PPV) or the root-mean-square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as L_v and based on the rms velocity amplitude. A commonly used abbreviation is vibration decibels (VdB), which, in this text, is when L_v is based on the reference quantity of 1 micro-inch per second.

4.11.2.6 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans, whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads. Smooth roads rarely produce perceptible ground-borne noise or vibration.

4.11.2.7 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil, but it has been shown to be effective enough for screening purposes in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.11.3 Existing Environmental Setting

4.11.3.1 Existing Project Site

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes. The project site consists of approximately 206 acres within the Portuguese Bend Landslide (PBL) complex; however, the overall area of land that contributes to the landslide's instability is much larger, at approximately 750 acres in size. The project site includes approximately 104 acres of land located within the City-owned Palos Verdes Nature Preserve (Preserve) and specifically within the Portuguese Bend and Abalone Cove Reserves.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon, and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community and the Portuguese Bend Beach Club.

The proposed project is intended to minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface. Thus, the proposed improvements would include infilling surface fractures to reduce the infiltration of surface water into the ground; constructing surface swales and retention areas to collect, slow, and divert surface water to the ocean; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass.

4.11.3.2 Existing Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples of these land uses include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. Land uses in the vicinity of the project area include open space within the project boundaries, as well as adjacent residential and open space bordering the project boundaries. The closest sensitive receptor locations to the project site are open space within the project boundaries and residences adjacent to the project boundary.

4.11.3.3 Overview of the Existing Noise Sources

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Palos Verdes Drive South that runs through the project site in an east-west direction. There is also noise created from the nearby residential uses and wildlife in the vicinity of the project site. The following describes the measurement procedures, measurement locations, noise measurement results, and modeling of the existing noise environment.

4.11.3.4 Noise Measurement Locations

The noise monitoring locations were selected to obtain the existing noise levels on the project site and in the vicinity of the nearby residential uses. Descriptions of the noise monitoring sites are provided below in Table 4.11.A, and the noise measurement locations are shown on Figure 4.11-1. Appendix A includes a photo index of the study area and noise level measurement locations.

4.11.3.5 Noise Measurement Results

The results of the noise level measurements are presented in Table 4.11.A, and the noise monitoring data printouts are included in Appendix B of the Noise Impact Analysis (provided as Appendix G to this EIR).

4.11.4 Regulatory Setting

The project site is located in the city of Rancho Palos Verdes. Noise regulations are addressed through the efforts of various federal, State, and local government agencies. The agencies responsible for regulating noise are discussed below.

Table 4.11.A: Existing (Ambient) Noise Level Measurements

Site No.	Description	Primary Noise Sources	Start Time of Measurement	Measured Noise Level	
				dB A L_{eq}	dB A L_{max}
1	Located in the eastern staging area, approximately 50 feet north of the Palos Verdes Drive centerline.	Vehicles on Palos Verdes Drive and aircraft overflights	12:16 p.m.	58.5	67.3
2	Located near the north portion of the project site, in front of the home at 94 Narcissa Drive.	Landscape equipment and wildlife	12:32 p.m.	43.8	59.8
3	Located near the west portion of the project site, in front of the home at 1 Peppertree Drive and approximately 190 feet north of the Palos Verdes Drive centerline.	Vehicles on Palos Verdes Drive and Peppertree Drive	12:50 p.m.	49.8	65.0
4	Located in the southern portion of the project site, on the driveway to the South Bay Archery Club and approximately 110 feet south of the Palos Verdes Drive centerline.	Vehicles on Palos Verdes Drive	1:03 p.m.	51.9	61.9

Source: Noise measurements taken on August 7, 2020.

dB A = A-weighted decibels

L_{max} = maximum instantaneous noise level

L_{eq} = equivalent noise level

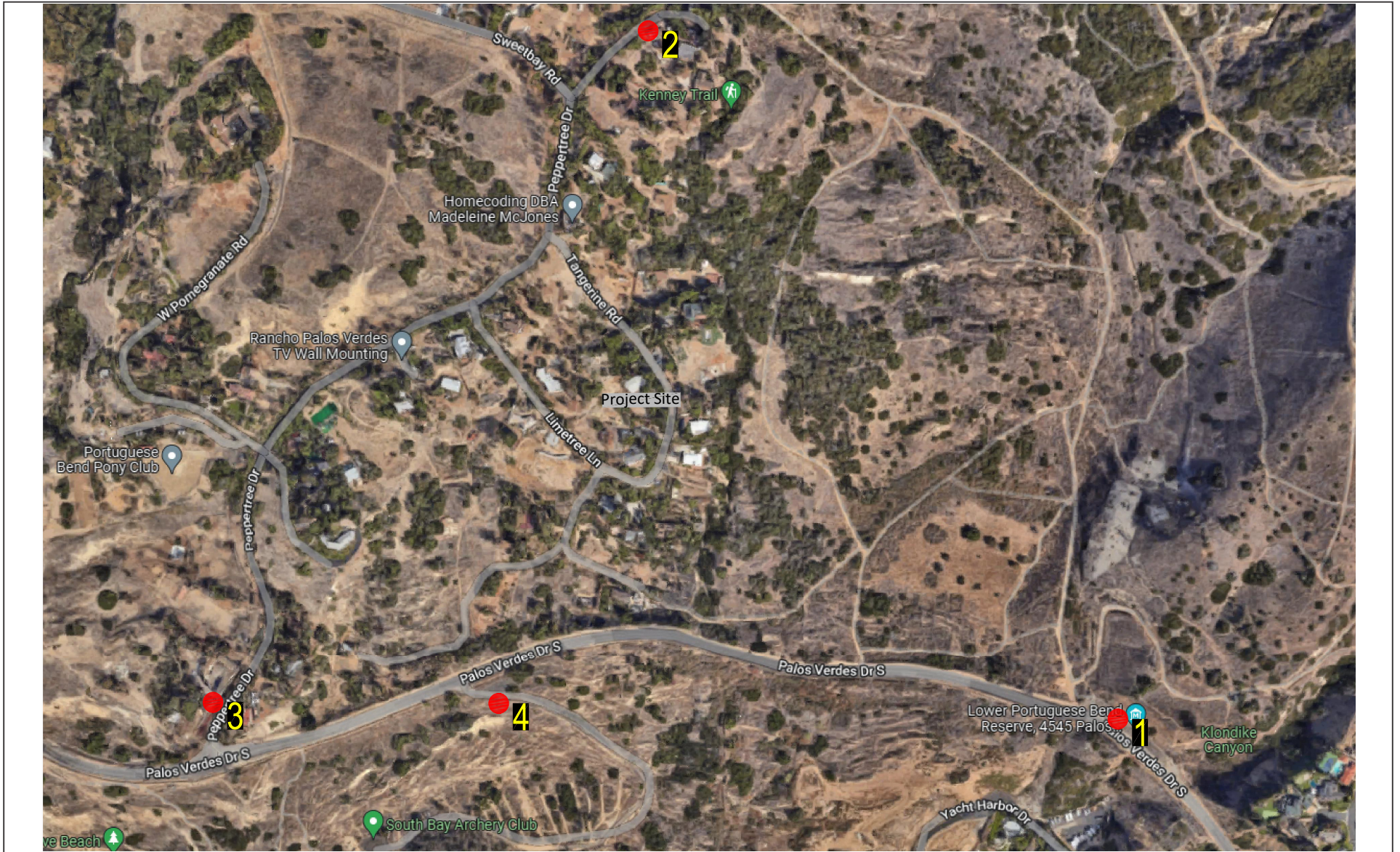


FIGURE 4.11-1

LSA

LEGEND

● Noise Measurement Locations



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

I:\PVE2202\G\Noise_Locations.ai (1/3/2023)

Portuguese Bend Landslide Remediation Project
Field Noise Monitoring Locations

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4.11.4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting State and local abatement efforts
- Promoting noise education and research

The federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the FHWA. Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise-sensitive” uses are either prohibited from being sited adjacent to a highway or, alternatively, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. The FTA recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relate to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on human effects and reactions to noise. A summary of the FTA’s findings for a detailed construction noise assessment are provided below in Table 4.11.B.

Table 4.11.B: Federal Transit Administration Construction Noise Criteria

Land Use	Day (dBA L_{eq} [8-hour])	Night (dBA L_{eq} [8-hour])	30-Day Average (dBA L_{dn})
Residential	80	70	75
Commercial	85	85	80 ¹
Industrial	90	90	85 ¹

Source: Federal Transit Administration (2018).

¹ Use a 24-hour L_{eq} (24-hour) instead of L_{dn} (30-day).

L_{dn} = day-night average level

L_{eq} = equivalent sound level

4.11.4.2 State Regulations

Noise Standards.

California Department of Health Services Office of Noise Control. Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools for use by local agencies to control and abate noise. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards. Title 24, Chapter 1, Article 4, of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60 dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45 dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1, of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302. Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Vibration Standards. Title 14 of the California Administrative Code Section 15000 requires that all State and local agencies implement the *California Environmental Quality Act (CEQA) Guidelines*, which requires the analysis of exposure of persons to excessive ground-borne vibration. However, no statute has been adopted by the State that quantifies the level at which excessive ground-borne vibration occurs.

Caltrans issued the *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.11.4.3 Local Regulations

The City's General Plan (City of Rancho Palos Verdes 2018) and Municipal Code (City of Rancho Palos Verdes 2022b) establish the following applicable policies related to noise and vibration.

City of Rancho Palos Verdes General Plan. The following are the applicable goals, policies, and programs for the proposed project from Chapter IX, Noise Element, of the City of Rancho Palos Verdes General Plan.

Goals.

- **Goal 1:** Through proper land use planning and regulations, to provide for a quiet and serene residential community with a minimum of restriction on citizen activity.

Policies.

Transportation Noise.

1. Encourage through traffic to existing arterials and collectors so that local roads are not used as by-passes or shortcuts, in order to minimize noise.
2. Control traffic flows of heavy construction vehicles en route to and from construction sites to minimize noise.
3. Encourage the state and federal governments to actively control and reduce vehicle noise emissions.
4. Encourage state law enforcement agencies to vigorously enforce all laws that call for the control and/or reduction of noise emissions.

Community Noise.

1. Develop an ordinance to control noise commensurate with local ambiance.
2. Maintain current and up-to-date information on noise control measures, on both fixed-point and vehicular noise sources.
3. Coordinate with all public agencies, especially our adjoining jurisdictions to study and/or control noise emissions.

Land Use Planning and Noise Control.

1. Mitigate impacts generated by steady state noise intrusion (e.g., with land strip buffers, landscaping, and site design).
2. Regulate land use so that there is a minimal degree of noise impact on adjacent land uses.

3. Require strict noise attenuation measures where appropriate.
4. Review noise attenuation measures applicable to home, apartment, and office building construction, make appropriate proposals for the City zoning ordinance, and make appropriate recommendations for modifying the Los Angeles County Building Code as it applies to the City.
5. Require the minimization of noise emissions from commercial activities by screening and buffering techniques.

City of Rancho Palos Verdes Municipal Code.

Section 17.48.030 – Setbacks. Except as otherwise provided in this chapter, no building, structure or portion of any building or structure, located under or above the ground, shall be constructed or extended closer to any street side, interior side, front or rear property line than the respective front, side or rear setback required in the district in which the property is located. On lots abutting a private street, setbacks shall be measured from the street easement line for measuring setbacks.

E. Exceptions.

5. **Minor Structures and Mechanical Equipment.** Trash enclosures, storage sheds or playhouses less than 120 square feet, doghouses, play/sports equipment, fountains, light fixtures on a standard or a pole, flagpoles, enclosed water heaters, barbecues, outdoor kitchens, garden walls, air conditioners, pool filters, vents and other minor structures or mechanical equipment shall not be located in any setback area in residential districts except as specified below:
 - b. Minor structures and mechanical equipment which exceed six inches in height, as measured from adjacent finished grade, may be permitted within an interior side or rear setback area by the director, through a site plan review application, unless the minor structure is a play house less than 120 square feet, a dog house, or play/sports equipment, then a site plan review application shall not be required; provided that no significant adverse impacts will result and provided that:
 - i. Noise levels from mechanical equipment do not exceed 65 dBA as measured from the closest property line.

Section 17.56.020 – Conduct of Construction and Landscaping Activities.

- B. It is unlawful to carry on construction grading or landscaping activities or to operate heavy equipment except between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between 9:00 a.m. to 5:00 p.m. on Saturday. No such activity shall be permitted on Sunday or the legal holidays listed in Section 17.96.920 (Holiday, Legal) of this code, unless a special construction permit is obtained from the director. Said special construction permit must be requested at least 48 hours before such work is to begin. Emergency work, as

defined in Section 17.96.630 (Emergency Work) of this code, and typical residential activities, such as lawn mowing, gardening (without the use of weed and debris blowers), and minor home repair/maintenance, shall be exempted from these time and day restrictions. The hours of operation for weed and debris blowers are specified in Chapter 8.16 (Weed and Debris Blowers) of this code.

4.11.5 Thresholds of Significance

The thresholds for noise impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to noise if it would result in:

Threshold 4.11.1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Threshold 4.11.2: Generation of excessive ground-borne vibration or ground-borne noise levels.

Threshold 4.11.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The IS, included as Appendix A, substantiates that there would be no impact associated with Threshold 4.10.3 because the nearest airport to the project site is over 3.5 miles north. Torrance Municipal Airport - Zamperini Field serves as a general aviation airport but is mostly home to private aircraft. The project site is not within 2 miles of an airport or within an airport land use plan. No impacts would occur, and no further analysis is required.

4.11.6 Project Impacts

Threshold 4.11.1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table 4.11.C, below, provides a list of the construction equipment anticipated to be used for each component of construction as detailed in *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Portuguese Bend Landslide Remediation Project (Air Quality Analysis)* (Vista Environmental 2023).

Table 4.11.C: Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor ¹ (percent)	Spec. 721.560 L _{max} at 50 feet ² (dBA, slow ³)	Actual Measured L _{max} at 50 feet ⁴ (dBA, slow ³)
Staging Areas and Access Routes				
Rubber-Tired Dozers	3	40	85	82
Tractors	2	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Surface Fracturing Infilling				
Excavator	1	40	85	81
Pump	1	50	77	81
Rubber-Tired Dozer	1	40	85	82
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Surface Water Improvements				
Excavator	1	40	85	81
Forklift (Gradall)	3	40	85	83
Pump	1	50	77	81
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Paving				
Bore/Drill Rig	1	20	84	79
Forklift (Gradall)	1	40	85	83
Generator	1	50	82	81
Pump	1	50	77	81
Tractor	1	40	84	N/A
Welder	1	40	73	74

Sources: Federal Highway Administration (2006) and CalEEMod default equipment mix.

¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

² Spec. 721.560 is the equipment noise level utilized by the RCNM program.

³ The “slow” response averages sound levels over 1-second increments. A “fast” response averages sound levels over 0.125-second increments.

⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

dBA = A-weighted decibels

N/A = not applicable

L_{max} = maximum instantaneous noise level

RCNM = Roadway Construction Noise Model

Table 4.11.C also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearest homes have been calculated according to the equipment noise levels and usage factors listed in Table 4.11.C and through use of the RCNM. All construction equipment was analyzed based on being placed in the middle of the nearest construction area to each sensitive receptor analyzed, which is based on the analysis methodology detailed in the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual) (FTA 2018) for a General Assessment. The RCNM model printouts are provided in Appendix C of the Noise Impact Analysis (Appendix G).

The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the project vicinity in excess of the standards established in the local general

plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions from the proposed project and compares the noise levels to the City standards.

It should be noted that the proposed hydraugers may include water pumps that would operate post-construction activities. However, these pumps would be located underground and would not create any noise on the surface. As such, no further analysis is provided on these pumps.

4.11.6.1 On-Site Noise Impacts

Noise impacts from on-site activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Section 17.56.020 of the City's Municipal Code exempts construction noise from the City's noise standards provided that construction activities occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays. No construction activities are allowed on Sundays or legal holidays. However, the City's construction noise standards do not provide any limits to the noise levels that may be created from construction activities, and even with adherence to the City standards, the resultant construction noise levels may result in a substantial temporary noise increase to the nearby residents.

In order to determine if the proposed construction activities would create a substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA L_{eq} over an 8-hour period during the daytime at the nearby homes or 85 dBA L_{eq} over an 8-hour period during the daytime at the church to the east, which is considered a commercial use. Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed earlier in Section 4.11.2 and Table 4.11.C. The results are shown below in Table 4.11.D, and the RCNM printouts are provided in Appendix C.

Table 4.11.D shows that greatest construction noise impacts would occur during the staging areas and access routes component, with a noise level as high as 71 dBA L_{eq} at the nearest homes to the north. The noise level at the staging area operations and access routes would not impact sensitive species because the staging areas will be located in a manner where construction operations are not immediately adjacent to habitat areas. Additionally, construction activity will be limited to daytime hours per city ordinance. The calculated construction noise levels shown in Table 4.11.D are within the FTA daytime construction noise standard of 80 dBA at the nearby homes. Therefore, through adherence to the limitation of allowable construction times provided in Section 17.56.020 of the City's Municipal Code, project-related noise levels would not exceed any standards established in the General Plan or Noise Ordinance, nor would project activities create a substantial temporary increase in ambient noise levels. As such, on-site project-related construction noise impacts would be less than significant.

Table 4.11.D: Noise Levels at the Nearby Sensitive Receptors

Construction Component	Noise Level (dBA L _{eq}) at:			
	Homes to North ¹	Homes to West ²	Homes to Southeast ³	Homes to East ⁴
Staging Areas and Access Routes	71	68	70	66
Surface Fracturing Infilling	69	67	68	64
Surface Water Improvements	70	67	69	65
Hydraugers	70	67	68	64
Noise Threshold⁵	80	80	80	80
Exceed Thresholds?	No	No	No	No

Source: RCNM, Federal Highway Administration (2006).

- ¹ The nearest homes to the north were determined to be on Narcissa Drive and are located as near as 300 feet from the center of the nearest construction area.
- ² The nearest homes to the west were determined to be on Peppertree Drive and are located as near as 400 feet from the center of the nearest construction area.
- ³ The nearest homes to the southeast were determined to be on Yacht Harbor Drive and are located as near as 350 feet from the center of the nearest construction area.
- ⁴ The nearest homes to the east were determined to be on Admirable Drive and are located as near as 550 feet from the center of the nearest construction area.
- ⁵ The Noise Threshold was obtained from Table above.

As previously noted, the proposed hydraugers may include water pumps that would operate post-construction activities. However, these pumps would be located underground and would not create any noise on the surface. As such, no further analysis is provided on these pumps.

Roadway Vehicular Noise. According to the *Transportation Assessment Portuguese Bend Landslide Remediation Project* (Traffic Analysis) (LLG 2023), the proposed project is anticipated to generate up to 22 worker trips and 60 truck trips per day, or a total of 82 vehicle trips per day. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB, the roadway traffic volumes would have to double. According to the Traffic Analysis, Palos Verdes Drive South in the vicinity of the project site currently has 16,500 vehicle trips per day. The vehicle trips generated by the proposed project would increase the traffic volume on Palos Verdes Drive South by up to 0.5 percent, which is well below the doubling of traffic volumes required to increase roadway noise levels by 3 dBA. As such, the proposed project’s roadway noise impacts would be well below a 3 dBA noise increase, which is the threshold of perception of an increase in noise levels. Given the nominal number of trips associated with operation, inspection, and maintenance activities, potential vehicular noise impacts are limited. Therefore, roadway noise impacts associated with construction and operation of the proposed project would be less than significant.

Threshold 4.11.2: Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

Less Than Significant Impact. Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the project site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage to the structures at the highest levels. Table

4.11.E gives the approximate vibration levels for particular construction equipment provided by the FTA; however, it should be noted that not all of these equipment types would be used during construction of the proposed project. The data in Table 4.11.E provides a reasonable estimate for a wide range of soil conditions.

Table 4.11.E: Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L _v) at 25 feet
Pile driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration (2018).
 L_v = vibration velocity

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table 4.11.E and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table 4.11.C.

The proposed project would not expose persons to generation of excessive ground-borne vibration or ground-borne noise levels. Vibration impacts from the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are homes located on Narcissa Drive, where construction activities would occur as close as 220 feet to the homes.

Since neither the City’s Municipal Code nor its General Plan provides a quantifiable vibration threshold level, Caltrans guidance that is detailed above has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

The primary source of vibration created from the proposed project would be from the operation of a bulldozer. From Table 4.11.E, above, a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest homes (220 feet away) would be 0.08 inch per second PPV, which would be below the 0.25 inch per second PPV threshold detailed above.

Ongoing operation, inspection, and maintenance activities associated with hydrauger pumps are not expected to result in vibration impacts. Vibration impacts associated with construction and operation of the proposed project would be less than significant, and no mitigation is necessary.

4.11.7 Level of Significance Prior to Mitigation

Prior to the implementation of regulatory compliance measures, the project could potentially result in the generation of a substantial temporary increase in ambient noise levels in the project vicinity in excess of established noise standards during construction. The project would not result in significant operational noise impacts. The project would result in less than significant impacts related to ground-borne vibration and ground-borne noise levels and no impact related to the exposure of people to excessive noise levels within the vicinity of an airport or private airstrip.

4.11.8 Regulatory Compliance Measures and Mitigation Measures

The project will comply with the following regulatory compliance measure.

RCM-NOI-1 The project contractor shall adhere to the limitation of allowable construction times provided in Section 17.56.020 of the City's Municipal Code.

4.11.9 Level of Significance after Mitigation

With implementation of the regulatory compliance measure above, all impacts would be reduced to a less than significant level.

4.11.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. A cumulative noise or vibration impact would occur if multiple sources of noise and vibration combine to create impacts in close proximity to a sensitive receptor. Therefore, the cumulative area for noise impacts is the project site and any sensitive receptors in the immediately surrounding area.

The cumulative impact area for noise related to the proposed project is the immediately surrounding area. Several residential and a few commercial development projects (remodels) are approved and/or pending within Rancho Palos Verdes. The residential projects include 36 new single-family residential units in various stages of construction (Trump National Golf Club [(Tract No. 50667)], 23 new single-family residential lots (no projects in review) associated with Trump National Golf Club (Tract No. 50666), 16 single-family residential units on vacant lots in various stages of construction and completion (Monks plaintiffs' lots) and 31 new single-family residential units on vacant lots in various stages of the development review process (non-Monks plaintiffs' lots), for a total of 106 total single-family units. Given the minimal number of cumulative projects with units dispersed at various locations in the city and not in the immediate project area, cumulative impacts would be negligible. Furthermore, each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing noise and would be reviewed for consistency with the NCCP/HCP, General Plan goals and policies, and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.11.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to noise. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid

impacts related to noise. Regulatory compliance measures have been added to alleviate any construction impacts. With compliance with regulations, impacts related to noise would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to noise.

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4.12 RECREATION

This section analyzes the potential recreation impacts associated with implementation of the Portuguese Bend Landslide Remediation Project (proposed project). This section also addresses the proposed impacts to recreation resources with consideration of local policies.

Information presented in this section is based on the City of Rancho Palos Verdes (City) General Plan (2018), Municipal Code (October 18, 2022), Local Coastal Specific Plan (adopted December 1978 and updated in 2015), Trails Network Plan (adopted November 1984), Conceptual Trails Plan (September 7, 1993, Update), Conceptual Bikeways Plan (adopted January 22, 1990, and revised October 15, 1996), Rancho Palos Verdes Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP; adopted November 2019), and Palos Verdes Nature Preserve: Preserve Public Use Master Plan (adopted April 2013).

4.12.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there were notes generated from the scoping session. For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Ten comment letters included comments related to recreation.

From the notes generated during the scoping session, a comment from the Infrastructure Management Advisory Committee (IMAC) was brought up regarding the surface swale and recreational trail integration. This comment from IMAC describes that much of the proposed swale structures are parallel to the existing Peppertree Trail and suggests integrating swales with the trail if there is an opportunity to do so in order to significantly reduce additional surface area for the swale along the trail for reduced environmental and aesthetic impacts.

A comment letter received by the Palos Verdes Horsemen's Association (PVHA) requested to minimize interruptions to trail use by equestrians to the fullest extent possible and that damage to any and all trails be repaired, at a minimum, to the trails' pre-project condition. The PVHA cites the City's Trails Network Plan (TNP) from 1984 and states that preservation and improvement of trails as outlined in the TNP should be followed as it related to the proposed project. The PVHA further expressed concerns related to trail connectivity due to potential construction-related trail closures and the potential reclassification of trail use, particularly for equestrian use.

Another comment letter received by the Palos Verdes Peninsula Land Conservancy (PVPLC) states that this EIR should closely evaluate impacts to recreation and trail accessibility, and maintain current trail routes to the maximum extent possible. The PVPLC further states in its letter that if trails must be closed or re-routed to accommodate construction measures, the impacts of constructing new trail segments should be evaluated as well.

Eight comment letters received by individuals from the general public expressed concerns regarding the recreational trails that could potentially be impacted by the proposed project and also cited the 1984 TNP's policies to maintain and enhance trails, calling for the proposed project to adhere to these policies to the maximum extent possible.

4.12.2 Methodology

The analysis in this section addresses issues relating to recreational facilities and the provision of recreational opportunities and services that may be affected by the proposed project. Impacts to recreational facilities in and around the project site were determined by comparing goals and policies as adopted by the City's General Plan and other planning documents referenced in Section 4.12.

4.12.3 Existing Environmental Setting

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the Portuguese Bend Landslide (PBL), is the Pacific Ocean. The proposed project site consists of approximately 206 acres (Ninyo & Moore 2022). The project site includes approximately 104 acres of land located within the city-owned Palos Verdes Nature Preserve (Preserve), specifically within the Portuguese Bend Reserve, Abalone Cove Park and Reserve, and the City's open space and beach area east of Abalone Cove Park and Reserve. The Preserve is owned by the City.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon, and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community and the Portuguese Bend Beach Club.

Public trails within the Abalone Cove Park and Reserve are located on the eastern side of the project site, seaward of Palos Verdes Drive South. Public trails within the Portuguese Bend Reserve are located on the northern side of the project site. Additional trails within the City's open space area near the archery range also fall within the project site on the seaward side of Palos Verdes Drive South.

Vegetation consists of 13.58 acres of Saltbrush Scrub, 114.07 acres of Undifferentiated Coastal Sage Scrub, 5.37 acres of Rhus Dominated Coastal Sage Scrub, 32.93 acres of Exotic Woodland, and 11.40 acres of disturbed vegetation. Due to the land movement, surface fractures exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South.

As noted above, the project site includes approximately 104 acres of land located within the City-owned Preserve, which encompasses areas that are a part of the Portuguese Bend Reserve and the Abalone Cove Park and Reserve. Both reserves are owned by the City, with the PVPLC serving as the City's Preserve Habitat Manager, and an overview of the recreational facilities contained within each reserve are described in more detail below.

4.12.3.1 Abalone Cove Park and Reserve

The Abalone Cove Park and Reserve is a 65-acre open space reserve area that contains a network of multi-use, pedestrian, and pedestrian-bike trails, which are listed below (PVPLC 2017a):

- Via de Campo Trail
- Abalone Cove Trail
- Chapel View Trail
- Beach School Trail
- Cave Trail
- Inspiration Point Trail
- Sea Dahlia Trail
- Olmsted Trail
- Portuguese Point Loop Trail
- Smuggler’s Trail
- Sacred Cove View Trail
- Cliffside Trail

Of these trails, only the Sacred Cove View Trail, Cliffside Trail, and Inspiration Point Trail fall within the project area. These Abalone Cove trails are open to the public for use during daylight hours and are scheduled for closures following any significant rainfall, and for habitat protection and erosion prevention when deemed appropriate. The Abalone Cove trails are located south of the project site, along the seaward side of Palos Verdes Drive South.

4.12.3.2 Portuguese Bend Reserve

The Portuguese Bend Reserve became a preserved land in 2005 and is the largest of the reserves that make up the Preserve (PVPLC 2017b). The Portuguese Bend Reserve consists of 399 acres of open space reserve area that contains a network of multi-use, pedestrian, and pedestrian-bike trails, which are listed below:

- Klondike Canyon Trail
- Barn Owl Trail
- Panorama Trail
- Sandbox Trail
- Paintbrush Trail
- Grapevine Trail
- Peacock Flats Trail
- Ailor Trail
- Water Tank Trail
- Garden Trail
- Ishibashi Farm Trail
- Peppertree Trail
- Ishibashi Trail
- Landslide Scarp Trail
- Ishibashi Trail
- Rim Trail
- Fire Station Trail
- Burma Road Trail
- Eagle’s Nest Trail
- Kubota Trail
- Toyon Trail
- Vanderlip Trail

Of these trails, the following fall within the project area: Water Tank Trail, Garden Trail, Ishibashi Farm Trail, Ishibashi Trail, Peppertree Trail, Landslide Scarp Trail, Burma Road Trail, Kubota Trail, Toyon Trail, and Vanderlip Trail. These Portuguese Bend Reserve trails are open to the public for use during daylight hours and are scheduled for closures following any significant rainfall, and for habitat protection and erosion prevention when deemed appropriate. The Portuguese Bend Reserve trails are located on the eastern boundary of the project site, northeast of the Abalone Cove Park and Reserve.

4.12.4 Regulatory Setting

4.12.4.1 State Regulations and Policies

California Coastal Act. The Recreation Policies contained in Article 3 of the Coastal Act are intended to provide protection for suitable oceanfront land to be used for recreational purposes, as well as maintaining upland areas to support coastal recreation uses where feasible. The policies prioritize water-oriented recreational activities and encourage increased recreational boating use of coastal waters by developing support facilities. The policies also place priority on the use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industries.

4.12.4.2 Local Regulations and Policies

City of Rancho Palos Verdes Conservation and Open Space Element. The City Council adopted the most recent Conservation and Open Space Element of the General Plan in September 2018. The project site is primarily zoned as Open Space - Hazard (OH), with a portion zoned as Residential Single Family - lot less than 20,000 square feet (RS-2) to the southeast (City of Rancho Palos Verdes 2018). Portions of the project site are also located in the City's OC-1 Natural Design Overlay Control District to the southeast and the OC-3 Urban Design Overlay Control District to the southwest and southeast. There are several goals/objectives, policies, and programs in the Conservation and Open Space Element that are applicable to the proposed project, as listed below:

- Conserve, protect, and enhance the City's natural resources; beauty; and open space for the benefit and enjoyment of its residents [...] future development shall recognize the sensitivity of the natural environment and be accomplished in such a manner as to maximize the protection of it (Goals 1.1)
- Implement the Rancho Palos Verdes NCCP/HCP (Policy 2.16)
- Continue to implement the City's Natural Overlay Control District and its performance criteria. (General Policy 2.17)
- Continue to implement the natural environment policies of the Coastal Specific Plan (General Policy 2.18)
- Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreation amenities such as trails (Habitat Protection, Policy 2.22)
- Ensure the maximum preservation of natural scenic character and topography of the City consistent with reasonable economic uses (Environmental Protection, Policy 2.27)
- Provide access to all public recreational land (Open Space and Recreational Resources, Policy 2.35)

City of Rancho Palos Verdes Trails Network Plan. The City Council adopted the TNP on November 27, 1984, with the most recent updates to the plan occurring in the mid-1990s. The TNP outlines goals and policies to serve as a device to achieve a consistent course of action in developing an integrated networks of trails to support the transportation, recreation, and other needs of the general public (City of Rancho Palos Verdes 1984). The following goals applicable to the proposed project are listed below:

- Assess new development for trail improvements whenever possible and appropriate (Goal III, Policy 1)
- Minimize environmental impacts of trail development, especially in environmentally sensitive areas (Goal 5)
- Use appropriate trail engineering techniques to avoid soil erosion, excessive compaction, and degradation (Goal 5, Policy 2)

Rancho Palos Verdes Natural Communities Conservation Plan/Habitat Conservation Plan. The City Council adopted the NCCP/HCP in 2019. It is a regional planning document that streamlines vital City public projects while conserving protected species and their habitats in perpetuity. The City has been issued an NCCP/HCP permit by the United States Fish and Wildlife Service pursuant to the NCCP/HCP. Pursuant to the NCCP/HCP, the Preserve serves as natural mitigation for the NCCP/HCP and has specific regulations pertaining to trail maintenance and natural resource protection. The Public Use Master Plan is a component of the NCCP/HCP that establishes management of public uses of the Preserve and amenities that support public use (including trails). Any trail damage resulting from the project will be mitigated using approved methods defined in the NCCP/HCP and the Public Use Master Plan.

4.12.5 Thresholds of Significance

The thresholds for recreation impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to recreation if it would:

Threshold 4.12.1: Increase the use of existing neighborhood and regional park or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

Threshold 4.12.2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

The IS (provided as Appendix A) substantiates that there would be no impacts associated with Threshold 4.12.2. The project does not include the construction or expansion of any additional recreational facilities. Therefore, Threshold 4.12.2 will not be addressed in the following analysis.

4.12.6 Project Impacts

Threshold 4.12.1: **Would the project increase the use of existing neighborhood and regional park or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

Less than Significant Impact with Mitigation Incorporated. It is expected that the proposed project would not ultimately result in an increase in a nearby population that would increase the use of existing recreational facilities. However, as described in Section 4.12.3, Existing Environmental Setting, the project site includes approximately 104 acres of land within the City-owned Preserve, which encompasses areas that are part of the Portuguese Bend Reserve and Abalone Cove Park and Reserve, and the PVPLC serves as the City's Habitat Manager.

The proposed project aims to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below landslide basal surface and minimizing stormwater infiltration into the subsurface. Thus, the proposed improvements would include elements such as infilling surface fractures to reduce the infiltration of surface water into the ground, constructing surface swales and flow reduction area to collect, slow, and divert surface water to the ocean, and installing a complex subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower water levels within the landslide mass. The location of these surface swales and hydraugers impedes on both reserves located within the City-owned Preserve. Therefore, the construction of these proposed project elements has the potential to temporarily close portions of the trail networks within the Portuguese Bend Reserve and Abalone Cove Park and Reserve, and coastal open space west of Abalone Cove Park and Reserve, in order to construct and implement the proposed project's engineering components.

It should be noted that the potential closure of trails would be temporary in nature and would last for a duration that only accommodates the construction and implementation of the proposed project components described above. Referencing back to the comment letters received regarding recreation, the construction of the project's components would be implemented in a manner that would minimize interruption to public access to all or a portion of these trail networks within each respective reserve in an effort to not cause deterioration of or alter existing trail facilities.

Although it has been noted that implementation of the project's engineering components will involve construction along portions of the trail networks within the project site, the project engineering and design team will exercise efforts to ensure that the integrity of these trail networks remains as close to the pre-construction condition as possible and that trails will still meet City trail standards. Mitigation Measure REC-1, described below, details this mitigation measure effort further, nothing that any replacement or reconstruction of trails affected by implementation of the project's engineering components shall be reviewed and approved at the City level as well and then provided to the PVPLC for its information and input to ensure the accessibility and usefulness of these trail networks are impacted at the lowest level possible.

In addition, the PVPLC and the City collaborate to provide the most up-to-date hiking trail conditions and alerts on their websites and through use of trail signage at the trail entrances within the

Preserve and at closure locations. Mitigation Measure REC-2 will be implemented to ensure the PVPLC and public are informed of any anticipated trail closures.

Therefore, with adherence to the trail preservation measures outlined in the Geotechnical Evaluation Report prepared for this project and agreement to proactively engage in trail closure communication with the PVPLC, impacts to recreation requirements would be less than significant. The proposed project is consistent with local regulations and policies pertaining to recreational facilities. The proposed project is not expected to result in a substantial increase in the use of existing recreational trail facilities such that substantial physical deterioration of any such facility would occur or be accelerated, and efforts to maintain the integrity and use classification of existing trail networks within the Abalone Cove Park and Reserve and Portuguese Bend Reserve and adjacent open space will be implemented with the proposed project. Therefore, the proposed project's impact would be less than significant.

4.12.7 Level of Significance Prior to Mitigation

Prior to mitigation, the potential closure of trails within the Abalone Cove Park and Reserve and Portuguese Bend Reserve could result in a Potentially Significant Impact to recreational resources.

4.12.8 Regulatory Compliance Measures and Mitigation Measures

4.12.8.1 Regulatory Compliance Measures

No regulatory compliance measures are required for the proposed project.

4.12.8.2 Mitigation Measures

- Mitigation Measure REC-1** **Swale Design.** Prior to finalizing the design of any of the project's components, the Project Engineer shall confirm that trails affected by construction activities are restored to their pre-construction condition is acceptable to the City's Director of Recreation and Parks. Rerouting/reconstruction of trails shall be reviewed and approved by the Project Engineer and provided to the Palos Verdes Peninsula Land Conservancy (PVPLC) for their input.
- Mitigation Measure REC-2** **Trail Closure Notifications.** Fifteen days prior to the anticipated closure of any designated trails within the Abalone Cove Park and Reserve or Portuguese Bend Reserve, the Project Engineer, and/or designee, shall notify the City's Recreation and Parks Department in order to notify PVPLC and provide adequate notice to the public about any expected trail closures during project construction. The public will be notified of closures via the City's and the PVPLC's websites, the City's listserv and social media platforms, and use of on-site signs at relevant entries to the Palos Verdes Nature Preserve and at closure locations.
- Mitigation Measure REC-3** **Trail Repair/Maintenance.** If Preserve trails become damaged or require maintenance resulting from the project, the City will

coordinate with the PVPLC to repair trails in accordance with the City Council-adopted Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and the Preserve Public Use Master Plan (PUMP).

4.12.9 Level of Significance after Mitigation

With implementation of Mitigation Measure REC-1, REC-2, and REC 3, which will ensure any trails affected by construction activities are restored, to the best extent possible, to their pre-construction condition and meet City trail standards; require the City to notify the City's Recreation and Parks Department regarding any trail closures in order to inform the public; and, finally, ensure that the City will coordinate with the City's Preserve Habitat Manager, the PVPLC, to repair any Preserve trails that become damaged during project construction, potential impacts to recreational facilities would be reduced to Less than Significant.

4.12.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for recreation. The cumulative impact area for recreation related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing recreational resources and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.12.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to recreation. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to recreation. Additionally, any recreation impacts (trail closures) related to this project will be temporary. Mitigation measures have been added to alleviate any long-term impacts. With compliance with these mitigation measures and regulations, impacts related to recreation would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to recreation.

4.13 TRANSPORTATION

This section analyzes the existing and project construction transportation and circulation conditions for the proposed Portuguese Bend Landslide Remediation Project (proposed project) and the surrounding area and identifies circulation impacts that may result during implementation of the proposed project. The analysis contained in this section is based on the *Transportation Assessment for the Portuguese Bend Landslide Remediation Project, Rancho Palos Verdes, Los Angeles County, California* (Transportation Assessment) (LLG 2023), which is provided in Appendix H of this Environmental Impact Report (EIR).

4.13.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. One of the comment letters included comments related to transportation. The letter from the California Department of Transportation (Caltrans) District 7 received on December 9, 2020, requested consideration of vehicle miles traveled (VMT) as part of the transportation assessment.

4.13.2 Methodology

The Transportation Assessment was prepared to identify and evaluate the potential transportation impacts associated with the implementation of the proposed project on the surrounding street system. The site location and general vicinity and study intersections are shown on Figure 4.13-1.

Following the City's transportation impact study requirements, the transportation assessment evaluated potential construction-related transportation impacts at four key intersections in the vicinity of the project site. The Highway Capacity Manual (HCM) methodology was used to determine the delay and corresponding levels of service (LOS) for the study intersections.

The Transportation Assessment (1) presents existing traffic volumes, (2) forecasts existing plus construction (project) traffic volumes, (3) determines proposed project-related impacts, and (4) identifies mitigation measures, if necessary.

Existing 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. peak-hour operating conditions for the study intersections were evaluated using the methodology outlined in Chapter 20 of the Highway Capacity Manual⁵ (HCM) for unsignalized intersections. The HCM method determines the average control delay experienced at the intersections. The two-way-stop-controlled methodology estimates the average control delay for each minor-street movement (or shared movement) as well as major-street left turns and determines the LOS for each constrained movement. Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The average control delay is measured in seconds per vehicle and includes delay due to deceleration to a stop at the back of the queue from free-flow speed, move-up time within the queue, stopped delay at the front of the queue, and delay due to acceleration back to free-flow speed. The six qualitative categories of LOS have been defined along with the corresponding HCM control delay value range, as shown in Table 4.13.A.

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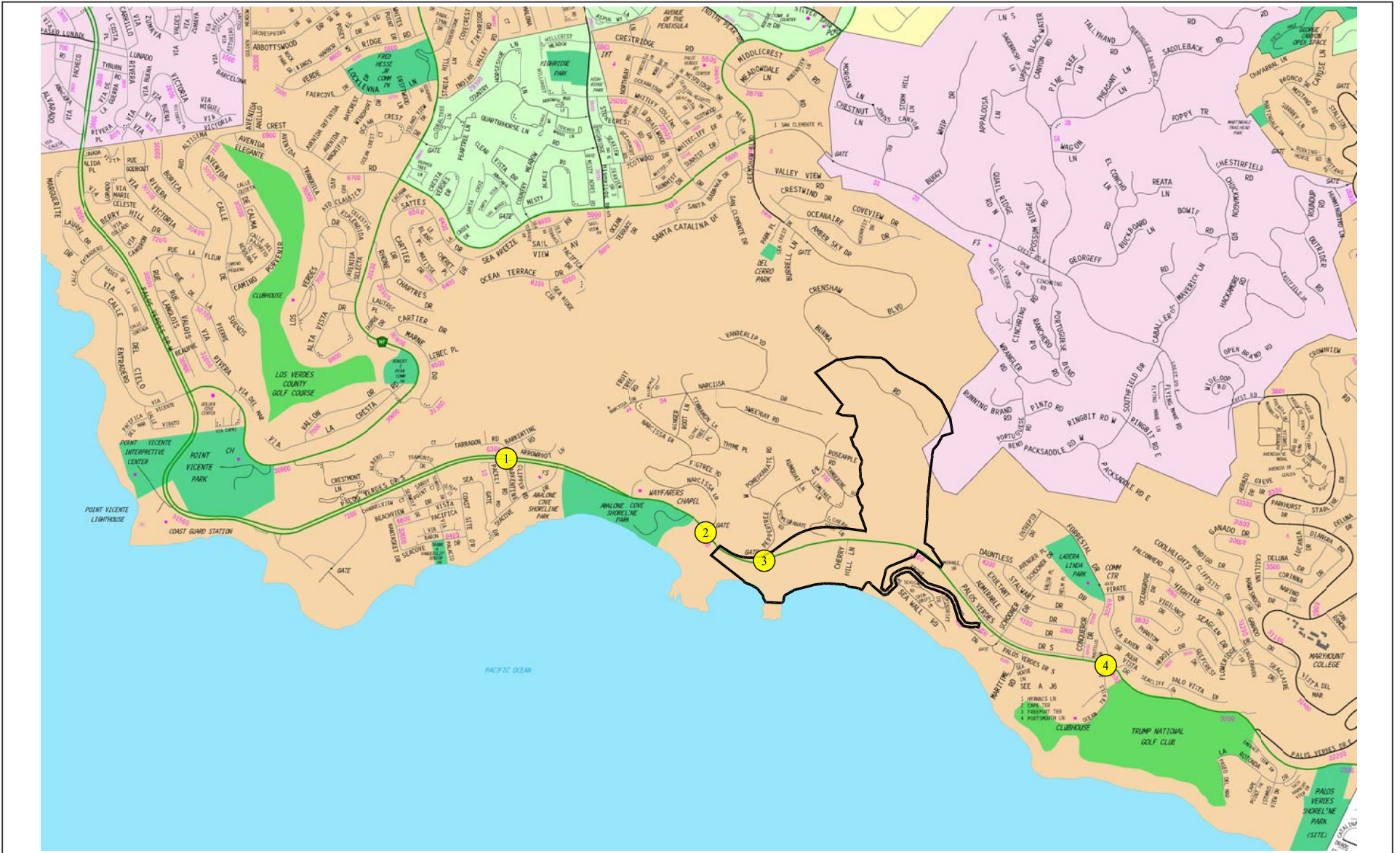




FIGURE 4.13-1

LSA

LEGEND

-  Study Intersection
-  Project Area



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project
 Site Location and General Vicinity and Study Intersections

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Table 4.13.A: Level of Service Criteria for Unsignalized Intersections

Level of Service	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

Source: Highway Capacity Manual, 6th Edition (Transportation Research Board 2016).
 sec/veh = seconds per vehicle

Transportation impacts at the study intersections were analyzed for the following conditions:

1. Existing conditions
2. Existing with construction traffic (“project”) conditions
3. Existing with construction traffic (“project”) and remediation conditions, if necessary

The traffic volumes for each condition were added to the volumes in the prior condition to determine the change in capacity utilization at the study intersections.

4.13.2.1 City of Rancho Palos Verdes Impact Criteria and Thresholds of Significance

The relative impact of the added traffic volumes expected to be generated during construction of the landslide remediation measures during the weekday a.m. and p.m. peak hours was evaluated based on analysis of existing operating conditions at the study intersections, with and without the peak construction traffic. The previously discussed capacity analysis procedures were utilized to investigate the future delay values and service level characteristics at each study intersection. The significance of the potential transportation impacts at each key intersection was then evaluated using the transportation impact criteria employed for projects in Rancho Palos Verdes.

4.13.3 Existing Environmental Setting

The Transportation Assessment area consists of those locations that have the greatest potential to experience significant traffic impacts due to the proposed construction activities associated with the project. In the traffic engineering practice, the study area generally includes those intersections that are:

1. Immediately adjacent or in close proximity to the project site;
2. In the vicinity of the project site and documented to have current or projected future adverse operational issues; and
3. In the vicinity of the project site and forecast to experience a relatively greater percentage of project-related vehicular turning movements.

The locations selected for analysis were based on the above criteria, forecast peak-hour construction trip generation, anticipated distribution of vehicle trips, and existing intersection/corridor operations. Four intersections were selected for analysis as they provide local access to the area, meet the above criteria, and define the extent of the boundaries for this transportation impact investigation.

4.13.3.1 Existing Circulation System

Immediate access to the construction site is provided via Palos Verdes Drive South. The following four study intersections were selected for analysis in order to determine potential traffic impacts related to the proposed construction project:

1. Barkentine Road/Palos Verdes Drive South
2. Narcissa Drive/Palos Verdes Drive South
3. Peppertree Drive/Palos Verdes Drive South
4. Forrestal Drive-Trump National Drive/Palos Verdes Drive South

All of the study intersections selected for analysis are controlled by stop signs, with the stop signs facing the minor street approaches. The existing roadway configurations and intersection controls at the study intersections are displayed on Figure 4.13-2 Existing Lane Configurations.

The City of Rancho Palos Verdes utilizes similar roadway categories recognized by regional, State, and federal transportation agencies. There are four general categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. The roadway categories are summarized as follows:

- **Freeways** are limited-access, high-speed travel ways included in the State and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of 1 mile or greater. No local access is provided to adjacent land uses.
- **Arterial roadways** are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes, and their major intersections are signalized. This roadway type is divided into two categories: major and minor arterials. Major arterials are typically four-or-more lane roadways and serve both local and regional through-traffic. Minor arterials are typically two- to four-lane streets that service local and commuter traffic.
- **Collector roadways** are streets that provide access and traffic circulation within residential and nonresidential (e.g., commercial and industrial) areas. Collector roadways connect local streets to arterials and are typically designed with two through travel lanes (i.e., one through travel lane in each direction) that may accommodate on-street parking. They may also provide access to abutting properties.
- **Local roadways** distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a through-street or a link between higher-capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.

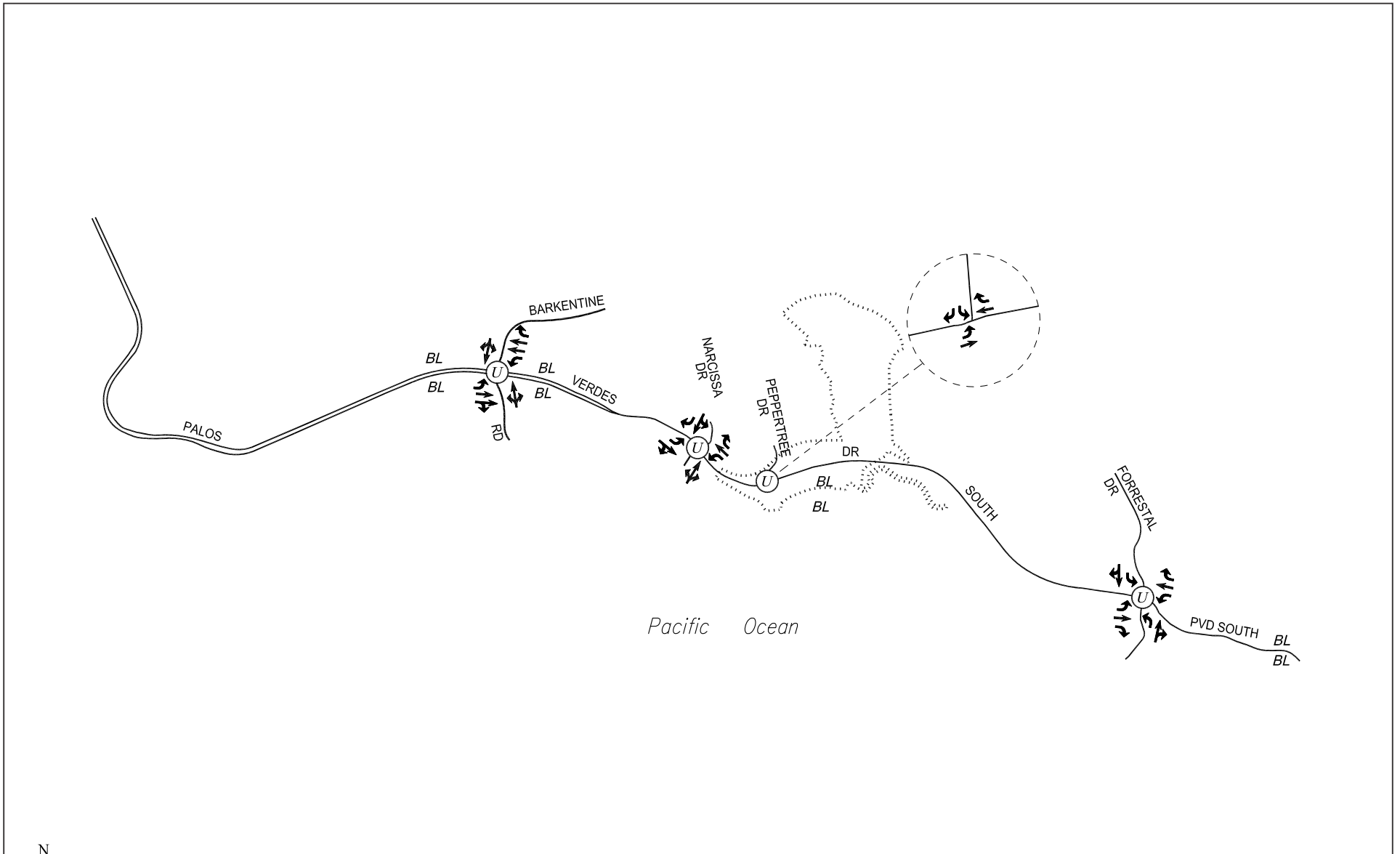




FIGURE 4.13-2

LSA

LEGEND

-  Project Area
-  Unsignalized Intersection
- BL** Bike Lane



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project
Existing Lane Configurations

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Roadway Descriptions. A review of the important roadways in the construction site vicinity and study area is summarized in Table 4.13.B. As indicated in Table 4.13.B, the important roadways within the study area were reviewed in terms of the number of lanes provided, parking restrictions, posted speed limits, etc. The roadway classifications of key roads in the study area also are presented in Table 4.13.B.

Table 4.13.B: Existing Roadway Descriptions

Roadway	Classification ¹	Travel Lanes		Median Types ⁴	Speed Limit
		Direction ²	No. Lanes ³		
Barkentine Road	Local Street	NB-SB	2	N/A	25
Narcissa Drive	Private Road	EB-WB	2	N/A	25
Peppertree Drive	Private Road	NB-SB	2	N/A	25
Forrestal Drive	Local Street	NB-SB	2	N/A	25
Trump National Drive	Local Street	NB-SB	2	N/A	25
Palos Verdes Drive South					
Palos Verdes Drive West to Narcissa Drive	Arterial	EB-WB	4	[5]	45
Narcissa Drive to 25 th Street	Arterial	NB-SB	2	[5]	35

Source: *Transportation Assessment Portuguese Bend Landslide Remediation Project* (Linscott, Law & Greenspan, October 28, 2022).

- ¹ Roadway classifications obtained from the City of Rancho Palos Verdes (Circulation Element), adopted September 2018.
- ² Direction of roadways in the project area: NB-SB = northbound and southbound; and EB-WB = eastbound and westbound.
- ³ Number of lanes in both directions on the roadway.
- ⁴ Median type of the road: RMI = Raised Median Island; 2WLT = 2-Way Left-Turn Lane; and N/A = Not Applicable.
- ⁵ Class II (Bike Lane)

Existing Public Bus Transit Service. Public bus transit service to the study area is currently provided by the Palos Verdes Peninsula Transit Authority. The existing public transit routes in the site vicinity are illustrated on Figure 4.13-3, Existing Transit Routes.

Bicycle Facilities. Bicycle access to the site is facilitated by the City’s bicycle roadway network. Existing Class II bicycle facilities are provided along Palos Verdes Drive South in the immediate vicinity of the construction site.

4.13.4 Regulatory Setting

4.13.4.1 Federal Regulations

No federal policies or regulations pertaining to transportation are applicable to the proposed project.

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LSA

LEGEND
 - - - - - Project Area



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

I:\PVE202\G\Existing_Transit_Routes.ai (1/3/2023)

FIGURE 4.13-3

Portuguese Bend Landslide Remediation Project

Existing Transit Routes

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4.13.4.2 State Regulations

Senate Bill 743. On September 27, 2013, Governor Brown signed Senate Bill (SB) 743. Under SB 743, the focus of transportation analysis pursuant to CEQA shifts from driver delay, or LOS, to reduction of VMT, reduction in greenhouse gas emissions, and creation of multimodal networks and promotion of mixed-use developments. In December 2018, the California Natural Resources Agency certified and adopted amendments to the CEQA Guidelines implementing SB 743 with an implementation date of July 1, 2020. The City of Rancho Palos Verdes has not yet adopted guidelines or significance thresholds for VMT analyses associated with projects. As such, traffic analysis utilizes existing, long-established protocols in accordance with current City guidelines, which are intended for application to an individual development project's operational traffic as well as traffic associated with long-range planning projects. Application of these guidelines to this short-term construction project is therefore conservative. Having stated the above, a qualitative VMT analysis has been conducted for purposes of assessing potential project related transportation impacts (i.e., refer to Section 15064.3(b)(3) of the latest CEQA Guidelines).

4.13.4.3 Regional Regulations

Los Angeles County Congestion Management Program. The Los Angeles County Congestion Management Program (CMP) was previously a State-mandated program that was enacted by the California State Legislature with the passage of Proposition 111 in 1990 that primarily utilized a LOS performance metric. SB 743 contains amendments to current congestion management law that allow counties to opt out of the LOS standards that would otherwise apply in areas where CMPs are utilized. Pursuant to California Government Code §65088.3, local jurisdictions may opt out of the CMP requirement without penalty if a majority of the local jurisdictions representing a majority of the County's population formally adopt resolutions requesting to opt out of the program. As of November 2019, the majority of local agencies representing the majority of the County's population have adopted resolutions to opt out of the program. Therefore, the CMP is no longer applicable in Los Angeles County.

4.13.4.4 Local Regulations

City of Rancho Palos Verdes General Plan Circulation Element, Section 3.1: Vehicular Networks. Currently, in Rancho Palos Verdes, intersections and roadways are considered impacted if they exceed LOS D.

4.13.5 Thresholds of Significance

The thresholds for transportation impacts used in this analysis are consistent with Appendix G of the State CEQA Guidelines. The proposed project may be deemed to have a significant impact with respect to transportation if it would:

Threshold 4.13.1: Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;

Threshold 4.13.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);

Threshold 4.13.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

Threshold 4.13.4: Result in inadequate emergency access.

4.13.6 Project Impacts

Threshold 4.13.1: Would the project conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. Vehicle trips associated with the operation, inspection, and maintenance of the project components would be conducted on an as-needed basis, utilizing existing access points to the project site, and are not expected to result in a substantial increase in daily trips. Monitoring of the hydrauger extraction activities may require daily monitoring after the initial installation but would be reduced to weekly or an even less frequent basis, depending on the level of monitoring needed.

Construction of the project components would generate vehicle trips associated with workers accessing the project site; delivery of construction equipment, vehicles, and materials; and disposal of construction debris. Construction equipment and vehicles will be staged on site. Although the project does not include any characteristics (e.g., permanent road closure or long-term blocking of road access) that would physically impair or otherwise interfere with transit, roadways, bicycle facilities, and/or pedestrian facilities in the project vicinity, the proposed project would require temporary lane controls on Palos Verdes Drive South to allow for construction activities associated with implementation of the project components on the project site, particularly the replacement of the existing drain under the roadway.

Construction Impacts. Weekday 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. traffic count data for the four study intersections were obtained from the Zone 2 – Portuguese Bend Landslide Moratorium Project Transportation Impact Study² and City of Rancho Palos Verdes Department of Public Works staff. All of the manual counts were conducted by independent traffic count subconsultants from 7:00 to 9:00 a.m. to determine the a.m. peak commute hour and from 4:00 to 6:00 p.m. to determine the p.m. peak commute hour. Three of the manual counts utilized in the transportation assessment were conducted in November 2018. The available manual traffic count data for the three intersections were adjusted by an ambient growth rate to reflect Year 2022 existing conditions. Based on review of the general traffic growth factors provided in the Los Angeles County 2010 Congestion Management Program³ (CMP) for the project study area (i.e., RSA 19, Palos Verdes), it is anticipated that existing traffic volumes in the vicinity will increase at an annual rate of 0.52 percent per year between 2015 and 2020 and 0.2 percent per year between 2020 and 2025. In order to provide a conservative analysis, the higher ambient growth rate of 0.52 percent was utilized for the analysis. The existing weekday a.m. and p.m. peak-hour manual counts of turning vehicles at the four study intersections are summarized in Table 4.13.C. The existing traffic volumes at the study intersections during the weekday a.m. and p.m. peak hours are shown on Figure 4.13-4 and Figure 4.13-5, respectively.

Table 4.13.C: Existing Traffic Volumes^{1,2} Weekday A.M. and P.M. Peak Hours

No.	Intersection	Date	Dir	A.M. Peak Hour		P.M. Peak Hour	
				Began	Volume	Began	Volume
1	Barkentine Road/Palos Verdes Drive South	11/14/2018	NB	8:00 AM	27	4:30 PM	14
			SB		9		7
			EB		451		872
			WB		1,057		525
2	Narcissa Drive/Palos Verdes Drive South	11/14/2018	NB	8:00 AM	0	4:30 PM	0
			SB		27		44
			EB		417		862
			WB		1,055		503
3	Peppertree Drive/Palos Verdes Drive South	11/14/2018	NB	8:00 AM	0	4:30 PM	0
			SB		24		17
			EB		406		854
			WB		1,062		511
4	Forrestal Drive/Palos Verdes Drive South	04/26/2022	NB	7:30 AM	13	4:30 PM	51
			SB		59		42
			EB		407		679
			WB		969		477

Source: *Transportation Assessment Portuguese Bend Landslide Remediation Project* (Linscott, Law & Greenspan, October 28, 2022).

¹ Counts conducted by Counts Unlimited, National Data & Surveying Services and AimTD LLC.

² The existing traffic count data for Intersection Nos. 1, 2, and 3 were adjusted by 0.52% per year to reflect Year 2022 conditions.

Dir = direction
EB = eastbound

NB = northbound
SB = southbound

WB = westbound

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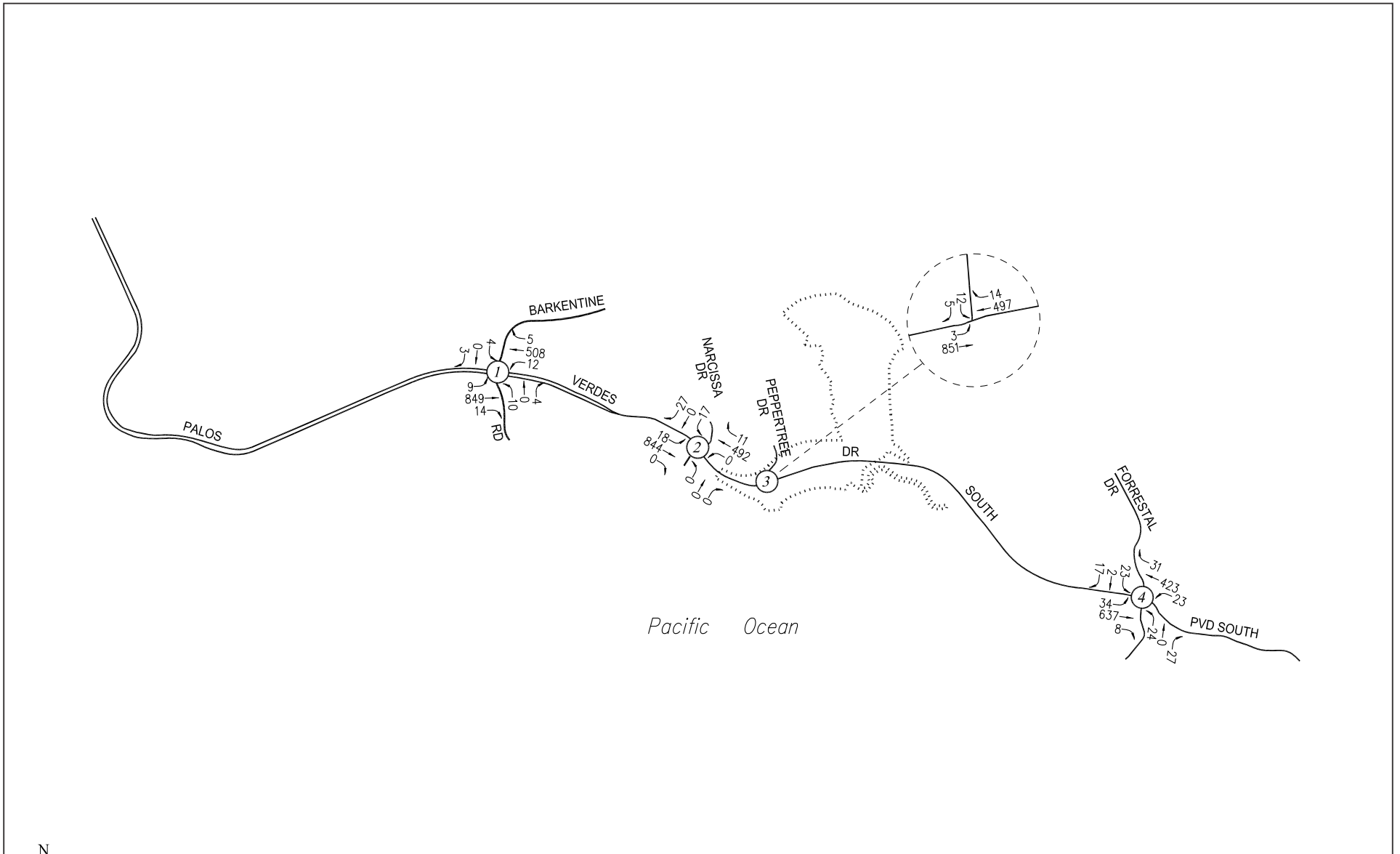


FIGURE 4.13-5

LSA

LEGEND

Project Area

Intersection Number



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project

Existing Traffic Volumes

Weekday PM Peak Hour

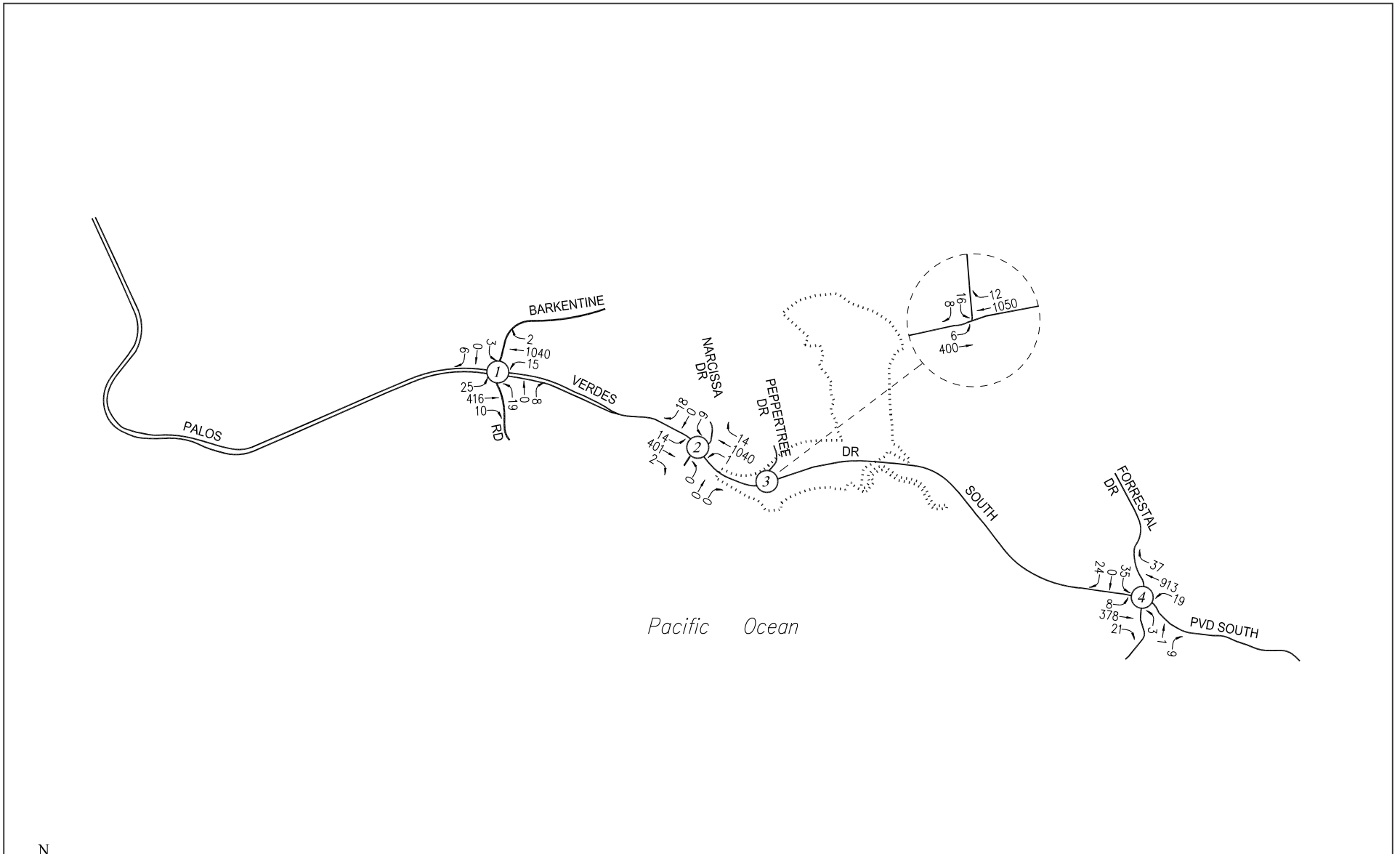


FIGURE 4.13-4

LSA

LEGEND

Project Area

Intersection Number



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project

Existing Traffic Volumes

Weekday AM Peak Hour

Project construction would generate traffic from construction worker travel, the arrival and departure of trucks delivering construction materials to the site, and the removal of debris generated by on-site demolition and excavation/site grading activities. Both the number of construction workers and trucks would vary throughout the construction process.

The most intensive period of overall construction activity and construction traffic generation is expected to occur during the construction of the surface water improvements. Other activities are expected to be less intensive in terms of overall construction traffic generation. Temporary lane closures could occur intermittently but are not anticipated to occur throughout the course of the project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained.

The staging area and construction worker parking would be provided at the construction site. It is anticipated that construction equipment would be brought onto and stored within the construction site boundary; thus, no staging is expected to occur on the perimeter public streets. Flagmen, however, would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site.

The City of Rancho Palos Verdes' Municipal Code § 17.56.020 currently limits construction hours Monday through Friday to no earlier than 7:00 a.m. and no later than 6:00 p.m. On Saturdays, construction hours are limited to no earlier than 9:00 a.m. and no later than 5:00 p.m., while no Saturday construction is assumed in this analysis so as to provide a conservative analysis. No work will be conducted on Sundays or any recognized federal, State, or local holidays.

Construction Traffic Trip Generation. During the peak period of construction activities (surface water improvements), a work force of 12 construction workers is estimated. As prevalent in the construction industry, the construction workday would commence at 7:00 a.m. and typically end at 3:00 p.m. Therefore, these particular construction workers would arrive during off-peak commuter hours. It is anticipated that construction workers would remain on site throughout their shift.

The number of construction worker vehicles is estimated using an average vehicle ridership (AVR) of 1.135 persons per vehicle (as provided in the South Coast Air Quality Management District in its *CEQA Air Quality Handbook*). Therefore, it is estimated that up to 22 vehicles (11 inbound trips and 11 outbound trips) on a daily basis would be generated by the construction workers during the peak construction period. Per typical construction industry practices, construction workers are expected to arrive at the project site before 7:00 a.m. Assuming the typical workday ends at 3:00 p.m., 25 percent of the workers are assumed to leave the site between 3:30 p.m. and 4:00 p.m., 25 percent between 4:00 p.m. and 4:30 p.m., 25 percent between 4:30 p.m. and 5:00 p.m. and the remaining 25 percent after 5:00 p.m. (including supervisors). Thus, while the majority of these construction worker trips would generally occur outside of the commute peak hours of adjacent street traffic, 50 percent of the workforce (i.e., roughly six workers) has been assumed to overlap with the weekday commute p.m. peak hour (i.e., between 4:30 p.m. and 5:30 p.m.) in order to provide a conservative forecast of construction traffic generation.

Peak Construction Truck Demand. In addition to construction worker vehicles, truck trips would be generated so as to remove material from the site as well as to deliver material to the site. These trucks may consist of larger vehicles delivering equipment and/or construction materials to the project area, or smaller pick-up trucks or four-wheel-drive vehicles used by construction supervisors and/or City inspectors. Heavy construction equipment would be located on site during the building construction activities and would not travel to and from the project site on a daily basis.

During the peak construction activity, a maximum of 30 trucks per day (i.e., vendor and haul trucks) are anticipated to be generated to/from the site. Therefore, the anticipated peak truck trip generation would total 60 truck trips per day (30 inbound trucks and 30 outbound trucks). Assuming a construction period of 8 hours per day, this corresponds to a total of roughly 4 trucks per hour. When a passenger car equivalency (PCE) factor of 2.5 is applied to the trucks, a total of 20 PCE-adjusted truck trips per hour is forecast (i.e., 10 PCE-adjusted inbound trips and 10 PCE-adjusted outbound trips).

It is anticipated that delivery trucks/construction equipment would be brought onto the site and be stored within the construction site boundary. Thus, no staging is expected to occur on the perimeter public streets. Therefore, detours around the construction sites would not be required. Flagmen, however, would be used to control traffic movement during the ingress or egress of trucks and heavy equipment from each construction site. The City will require that a Construction Traffic Control Plan be developed to minimize potential conflicts between construction activity and through traffic.

Peak Construction Traffic Generation Summary. During peak construction activities at the site, construction trucks are forecast to generate 60 truck trips per day (30 inbound trucks and 30 outbound trucks). Assuming a construction period of roughly 8 hours per day (beginning no earlier than 7:00 a.m., with the last truck exiting the site prior to 6:00 p.m.) and a PCE factor of 2.5, this corresponds to a forecast total of roughly 20 PCE-adjusted truck trips per hour (i.e., 10 PCE-adjusted inbound trips and 10 PCE-adjusted outbound trips). It is anticipated that the construction workers would work in one shift, with the shift beginning at 7:00 a.m. and ending at 3:00 p.m. The number of construction workers during this period totals 12 workers, which is forecast to result in an increase of 6 outbound worker vehicle trips during the weekday p.m. peak hour. The workers are expected to arrive at the site prior to the a.m. peak hour. A full summary of the traffic generation associated with peak construction activities for the two traffic analysis time periods is provided below:

- **A.M. Peak Hour:** The highest level of overall construction traffic impact during the a.m. peak hour is expected to occur when haul/vendor truck trips are forecast to result in 10 PCE-adjusted inbound truck trips and 10 PCE-adjusted outbound truck trips. Construction workers arrive at the site prior to 7:00 a.m. and thus do not impact the a.m. peak hour. Thus, the total a.m. peak-hour peak traffic generation during construction is forecast to total 20 PCE-adjusted vehicle trips (i.e., 10 PCE-adjusted inbound trips and 10 PCE-adjusted outbound trips).

- P.M. Peak Hour:** The highest level of overall construction traffic impact during the commuter p.m. peak hour is expected to occur when the peak construction workforce is forecast to result in 6 outbound vehicle trips. It is also estimated that 20 PCE-adjusted vendor truck trips (10 PCE-adjusted inbound trips and 10 PCE-adjusted outbound trips). Thus, the total commuter p.m. peak-hour traffic generation during construction is forecast to total 20 vehicle trips (10 inbound trips and 10 outbound trips).

Over a 24-hour period, the construction of the proposed project is expected to generate 172 daily trip ends (PCE-adjusted) during the peak construction activities. A summary of the traffic generation associated with peak construction activities is provided in Table 4.13.D. The project traffic volume distribution percentages during weekday a.m. and p.m. peak hours at the study intersections are illustrated on Figure 4.13-6, Construction Traffic Trip Distribution.

Table 4.13.D: Construction Peak-Hour Trip Generation¹

Generator Type	Daily	A.M. Peak-Hour Volumes ²			P.M. Peak-Hour Volumes ²		
		In	Out	Total	In	Out	Total
Workers ³	22	-	-	-	0	6	6
Truck Trips ⁴	60	4	4	8	4	4	8
PCE-Adjusted Truck Trips ⁵	150	10	10	20	10	10	20
Total PCE-Adjusted Trips	172	10	10	20	10	16	26

¹ Project construction information provided by the City of Rancho Palos Verdes Department of Public Works and Chambers Group, Inc.

² Trips are one-way traffic movements, entering or leaving.

³ A total of 12 workers is anticipated at the project site during construction of Component II. Based on an AVR of 1.135 persons per vehicle, 22 vehicles would be generated by the construction workers. Workers are expected to arrive before the 7:00 a.m. shift start time (outside of the a.m. peak hour). During the p.m. peak hour, it is assumed that 50% of the workers would depart the site; therefore, a total of 6 outbound trips are anticipated to occur (12 workers x 50% = 6 outbound trips).

⁴ Truck trips were derived based on the following:

Daily Truck Trips = 30 trucks * 2 trips/day = 60 round-trip truck trips per day

Peak hour truck trips = 60 trips per day/8 hours = 8 truck trips per hour (4 inbound trips, 4 outbound trips)

⁵ A PCE factor of 2.5 was employed for analysis purposes. This accounts for the assumption that a truck has the same overall effect on intersection traffic operations as 2.5 passenger cars.

AVR = average vehicle ridership

PCE = passenger car equivalency

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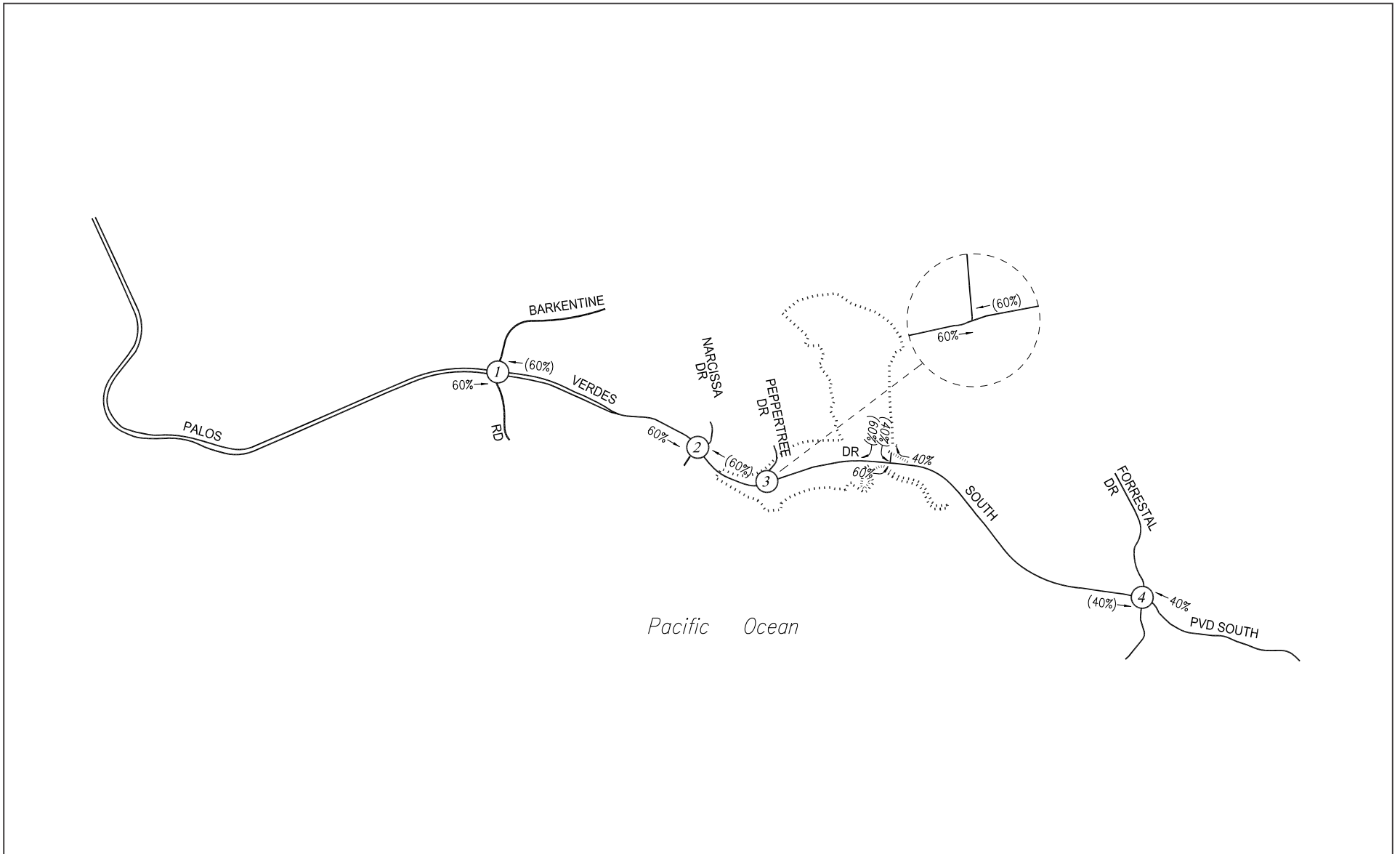


FIGURE 4.13-6

LSA



LEGEND

Project Area

Intersection Number

XX Inbound Percentage

(XX) Outbound Percentage

NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project
Construction Traffic Trip Distribution

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Transportation Analysis. Existing a.m. and p.m. peak-hour operating conditions for the study intersections were evaluated using the methodology outlined in Chapter 20 of the Highway Capacity Manual (HCM) (Transportation Research Board 2016) for unsignalized intersections. The HCM method determines the average control delay experienced at the intersections. The two-way stop control (TWSC) methodology estimates the average control delay for each minor-street movement (or shared movement), as well as major-street left turns, and determines the LOS for each constrained movement. Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The average control delay is measured in seconds per vehicle and includes delay due to deceleration to a stop at the back of the queue from free-flow speed, move-up time within the queue, stopped delay at the front of the queue, and delay due to acceleration back to free-flow speed. Table 4.13.E provides the definitions of the six qualitative categories of LOS along with the corresponding HCM control delay value range.

Table 4.13.E: Level of Service Criteria for Unsignalized Intersections

LOS	Highway Capacity Manual Delay Value (sec/veh)	LOS Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

LOS = level of service

Impact Criteria and Thresholds. The relative impact of the added traffic volumes expected to be generated during construction of the landslide remediation measures during the weekday a.m. and p.m. peak hours was evaluated based on analysis of existing operating conditions at the study intersections, without and with the peak construction traffic. The previously discussed capacity analysis procedures were utilized to investigate the future delay values and service level characteristics at each study intersection. The significance of the potential transportation impacts at each key intersection was then evaluated using the transportation impact criteria employed for projects in Rancho Palos Verdes. Per the City’s General Plan, the City of Rancho Palos Verdes’ minimum LOS standard for roadway segment and intersection operations is LOS D.

The City has established the following thresholds of significance for unsignalized intersections:

- A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak-hour LOS of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or

- A significant impact would occur at an unsignalized intersection if the peak-hour LOS of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

Existing Conditions. As shown in Column 1 of Table 4.10.F, one of the four study intersections is currently operating at acceptable LOS (i.e., LOS D or better) during the weekday a.m. and p.m. peak hours. The following study intersections currently operate at LOS E or F during the peak hours shown below under existing conditions based on the calculated intersection delay (in seconds):

- Intersection No. 2: Narcissa Drive/Palos Verdes Drive South
- Intersection No. 3: Peppertree Drive/Palos Verdes Drive South
- Intersection No. 4: Forrestal Drive/Palos Verdes Drive South

Table 4.13.F: Summary of Delays and Levels of Service Weekday A.M., and P.M. Peak Hours

No.	Intersection	Traffic Control	Peak Hour	1		2			
				Existing		Existing with Construction		Change	
				Delay ¹	LOS ²	Delay ¹	LOS ²	Delay [(2)-(1)]	Impact ³
1	Barkentine Road/Palos Verdes Drive South	Two-Way	AM	24.1	C	24.3	C	0.2	No
		Stop	PM	27.5	D	28.0	D	0.5	No
2	Narcissa Drive/Palos Verdes Drive South	Two-Way	AM	48.6	E	49.7	E	1.1	No
		Stop	PM	44.4	E	45.7	E	1.3	No
3	Peppertree Drive/Palos Verdes Drive South	Two-Way	AM	37.3	E	38.2	E	0.9	No
		Stop	PM	31.0	D	31.8	D	0.8	No
4	Forrestal Drive/Palos Verdes Drive South	Two-Way	AM	54.7	F	55.4	F	0.7	No
		Stop	PM	37.4	E	38.0	E	0.6	No

Source: *Transportation Assessment Portuguese Bend Landslide Remediation Project* (Linscott, Law & Greenspan, October 28, 2022).

¹ Reported control delay values in seconds per vehicle. For two-way stop-controlled intersections, reported control delay values represent the delays associated with the most constrained approach of the intersection.

² Unsignalized intersection LOS are based on the following criteria:

Control Delay (s/veh)	LOS
<= 10	A
> 10–15	B
> 15–25	C
> 25–35	D
> 35–50	E
> 50	F

³ For unsignalized intersections, the City of Rancho Palos Verdes has established the following thresholds of significance:

- A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak-hour LOS of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or
- A significant impact would occur at an unsignalized intersection if the peak-hour LOS of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

LOS = level(s) of service
s/veh = seconds per vehicle

Existing with Construction Traffic Conditions. In order to determine the operating conditions of the street system under existing with project construction activities, traffic expected to be generated during peak construction activities was added to the existing traffic volumes at each of the study intersections. As shown in Table 4.13.F, application of the City's significance criteria to the existing plus construction scenario indicates that none of the study intersections are expected to be significantly impacted by the peak construction activities of the proposed project during any of the analyzed time periods. Therefore, no formal, permanent transportation mitigation measures are required or recommended.

The existing with construction traffic volumes (existing traffic volumes plus construction traffic volumes) at the study intersections during the weekday a.m. and p.m. peak hours are shown on Figures 4.13-7 and 4.13-8, respectively.

With the implementation of Compliance Measure T-1 (Haul Route Plan) and Compliance Measure T-2 (Construction Traffic Control Plan), potential conflicts between construction activity and through traffic would be minimized. The Construction Traffic Control Plan will identify all traffic control measures, signs, and delineators to be implemented through the duration of construction activity. The truck haul route program would ensure that the effect of haul truck trips on the local roadway network is minimized. Because of these requirements, and because construction-related trips would be nominal and well dispersed throughout the day, construction-related transportation impacts are expected to be less than significant.

Threshold 4.13.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. The City of Rancho Palos Verdes has not yet adopted guidelines or significance thresholds for VMT analyses associated with projects. As such, the traffic analysis utilizes existing, long-established protocols in accordance with current City guidelines, which are intended for application to an individual development project's operational traffic, as well as traffic associated with long-range planning projects. Application of these guidelines to this short-term construction project is therefore conservative. Having stated the above, a qualitative VMT analysis may be appropriate for purposes of assessing potential construction-related transportation impacts (i.e., refer to Section 15064.3(b)(3) of the latest *CEQA Guidelines*). Therefore, it is assumed that the construction-related traffic associated with the Portuguese Bend Landslide Remediation Project could potentially result in a temporary increase in regional VMT. However, since the traffic anticipated to be generated during construction activities is expected to be temporary and intermittent, any increase in regional VMT resulting from this construction activity is also assumed to be temporary and intermittent. Similarly, vehicle trips associated with the operation, inspection, and maintenance of the project components will be conducted on an as-needed basis, utilizing existing access points to the project site, and are not expected to result in a substantial increase in regional VMT daily trips.

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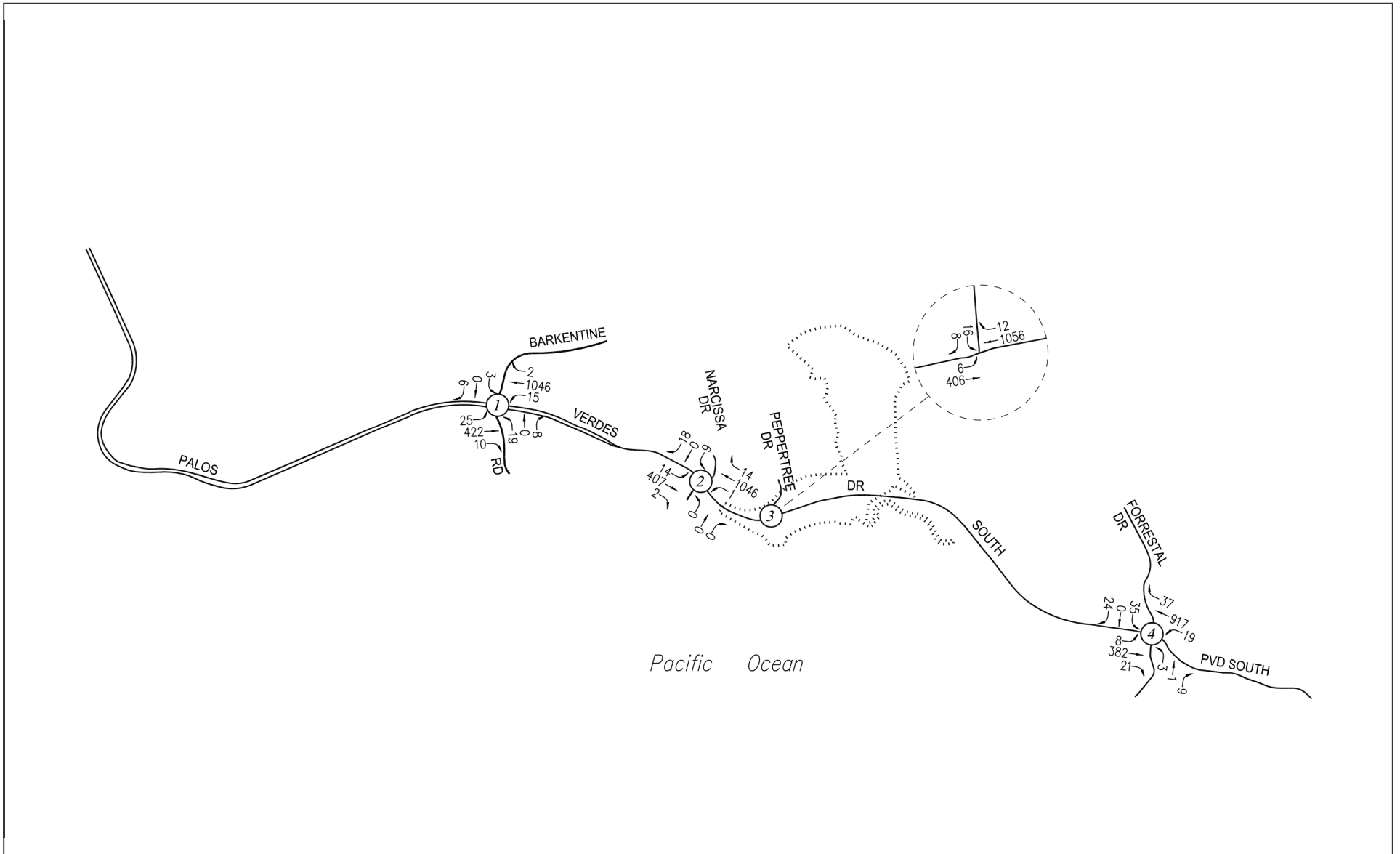


FIGURE 4.13-7

LSA

LEGEND

- Project Area
- Intersection Number
- Inbound Percentage
- Outbound Percentage



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project
Existing With Construction Traffic Volumes
Weekday AM Peak Hour

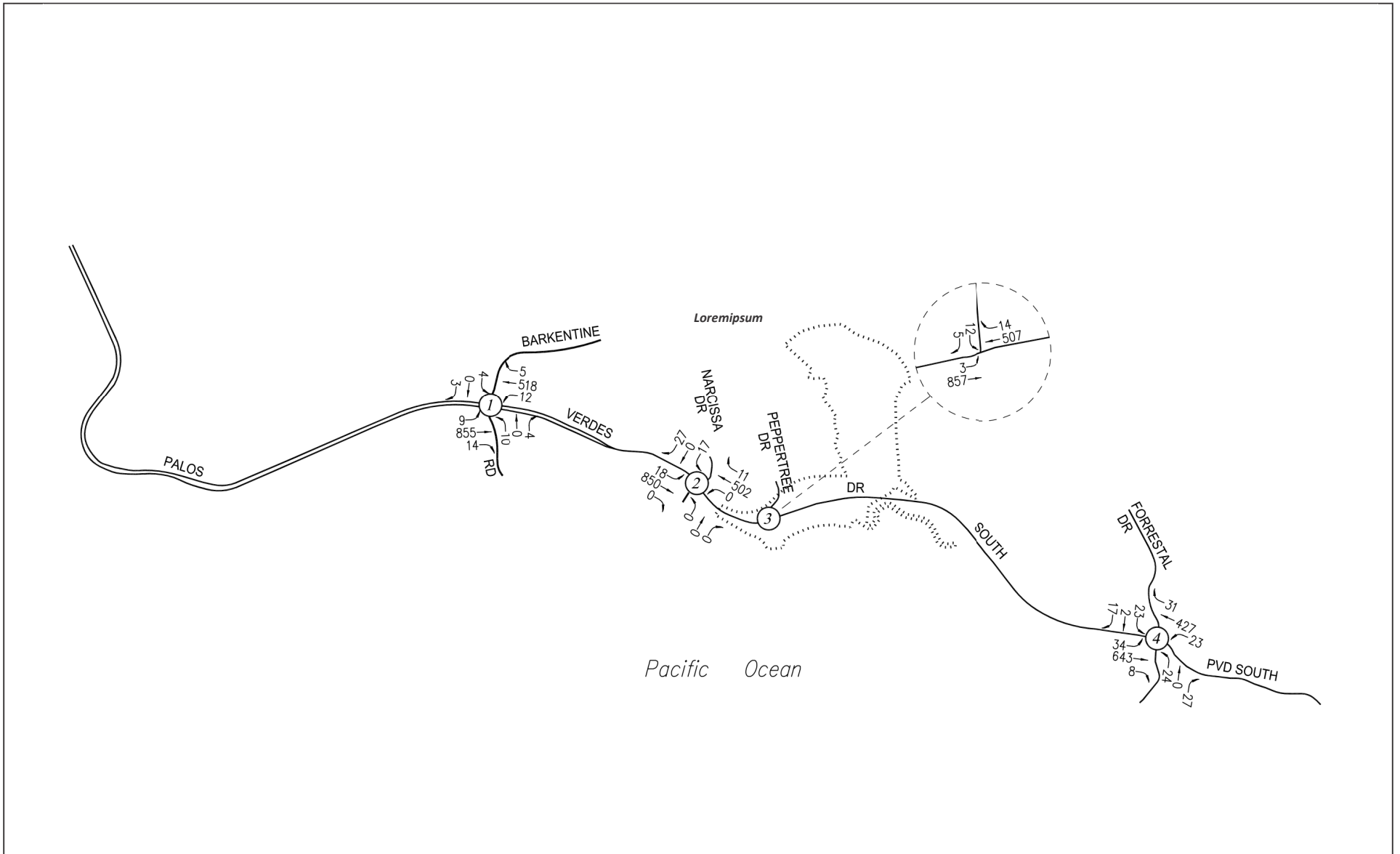


FIGURE 4.13-8

LSA

LEGEND

Project Area

Intersection Number



NOT TO SCALE

SOURCE: Linscott Law & Greenspan

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Portuguese Bend Landslide Remediation Project
 Existing With Construction Traffic Volumes
 Weekday PM Peak Hour

Threshold 4.13.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Less Than Significant Impact. The proposed project would remediate the Portuguese Bend Landslide and would not alter the existing roadway system in the long term. However, because of the potential for roadway construction controls along portions of Palos Verdes Drive South, there could be a temporary increase in hazards. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures on Palos Verdes Drive South are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site. A Construction Traffic Control Plan will be prepared for the project, which will adequately address potential transportation hazards due to construction activity. Proposed access roads on site to construct and maintain the project components have been designed so that there are no sharp curves and the roads are compatible with the existing trail system on site. Potential impacts associated with hazardous design features or incompatible land uses are considered less than significant.

Threshold 4.13.4: Result in inadequate emergency access.

Less Than Significant Impact. Palos Verdes Drive South is designated by the General Plan as a disaster route (City of Rancho Palos Verdes 1975). As previously mentioned, there is a potential that portions of Palos Verdes Drive South may be affected temporarily during construction. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained. Ongoing operation, inspection, and maintenance of project components would not require any lane closures on Palos Verdes Drive South. Potential effects on emergency access due to construction or operation of the proposed project are considered less than significant.

4.13.7 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts. However, the following compliance measures are existing City procedures that are applicable to the proposed project and are considered in the analysis of potential impacts related to transportation. These requirements are considered to be mandatory compliance measures; therefore, they are not mitigation measures.

4.13.8 Regulatory Compliance Measures and Mitigation Measures

4.13.8.1 Regulatory Compliance Measures

Compliance Measure T-1 Prior to permit issuance, the construction contractor shall prepare a truck haul route plan identifying routes for heavy truck and

equipment traffic. The Truck Haul Route Plan shall be approved by the City Engineer. Loaded trucks shall be prohibited from traveling on Palos Verdes Drive South through the landslide.

- **Compliance Measure T-2:** Prior to permit issuance, the construction contractor shall prepare a Construction Traffic Control Plan for approval by the City Engineer. The Construction Traffic Control Plan shall include, at a minimum, the following components:
 - Maintain existing access for land uses in proximity of to the project site;
 - Limit any potential lane closures to off-peak travel periods;
 - Schedule receipt of construction materials during non-peak travel periods, to the extent possible;
 - Coordinate deliveries to reduce the potential of trucks waiting to unload for extended periods of time;
 - Prohibit parking by construction workers on adjacent streets and direct construction workers to available parking; and
 - Maintain priority access for emergency vehicles.
 - Limit hours of deliveries, to no earlier than 7:00 a.m. and no later than 6:00 p.m., Monday through Friday, and between 9:00 a.m. to 5:00 p.m. on Saturday. No construction shall be permitted on Sundays and federal holidays.

4.13.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.13.9 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to transportation. No mitigation would be required.

4.13.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. The cumulative impact area for transportation is the city of Rancho Palos Verdes. The majority of the vehicle trips associated with the proposed project are temporary and would occur during construction. Vehicle trips associated with operation, inspection, and maintenance of the

project components would be nominal. Given the temporary nature of the majority of the project trips, there will be no cumulative impacts. Additionally, the project will protect important city infrastructure. From a transportation and circulation perspective, landslide remediation will provide for the continued operation of Palos Verdes Drive South, an important transportation circulation link connecting various communities within Rancho Palos Verdes. If Palos Verdes Drive South were inoperable due to landslide activity, VMT within the city would increase due to residents needing to take circuitous routes to traverse the city.

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4.14 TRIBAL CULTURAL RESOURCES

This section evaluates the potential for the Portuguese Bend Landslide Remediation Project (proposed project) to impact tribal cultural resources. Potential impacts to other cultural resources, including historic and non-Native American archaeological resources, are evaluated in Section 4.4, Cultural Resources, of this Draft Environmental Impact Report (EIR). The analysis in this section summarizes pertinent information from the Native American consultation process between the City of Rancho Palos Verdes (City) and the Native American tribes described below. The information and analysis presented in this section are based on the City's General Plan Conservation and Open Space Element (2018) and results from a Cultural Resources Phase I and Paleontological Pedestrian Survey prepared by Chambers Group for the City (Chambers Group, Inc. 2023).

4.14.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, public comments were received from a scoping session held on December 19, 2020. For copies of the IS/NOP comment letters, refer to Appendix A of this EIR. Two of the comment letters included comments related to tribal cultural resources:

- The comment by the Native American Heritage Commission (NAHC) received on November 16, 2020, recommended consultation with California Native American tribes that are affiliated with the project site area as early as possible to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

4.14.2 Methodology

A cultural resources assessment was prepared by Chambers Group in 2023. The study included a record search requested on July 14, 2020, at the South Central Coastal Information Center (SCCIC) to determine the extent of previous cultural resources investigations within a 0.5-mile radius of the project site; a pedestrian survey conducted on August 14, 2020; and extensive archaeological background research to determine if cultural resources are located within the project area.

Chambers Group also submitted a request for a Sacred Lands File (SLF) records search with the NAHC on July 13, 2020. The NAHC included a list of local tribal groups that may have further insight into the potential tribal interests or concerns in the project area. Using the list provided by the NAHC, the City transmitted notification letters drafted by Chambers Group on August 5, 2020, to all tribes on the list provided by the NAHC. The Gabrielino Tongva Indians of California (GTIOC) Tribal Council responded on August 13, 2020, with a request to engage in formal consultation with the City.

4.14.3 Existing Environmental Setting

In its existing condition, the 206-acre project site is undeveloped and vacant and consists of vegetation and drainage structures. Based on the cultural resources survey and records search, 2 of the 15 previously documented prehistoric cultural resources are located within the project limits, as described below:

- P-19-002253, a prehistoric resource that was described when first recorded in 1992 by David Van Horn from Archaeological Associates as a deposit of marine shell and lithic debitage, consists of shell fragments, Monterey chert flakes, cores, and scrapers. Subsurface testing did not result in significant findings, and site record notes reveal that half of this site was destroyed by construction and agricultural activity on the site. No evidence of P-19-002253 was observed during recent surveys of the project area.
- P-19-002586, a prehistoric marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris that was described when first recorded in 1997 by Richard Cerreto from Chambers Group as a deposit of marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris, is indicated to be in fair condition, although it is considered disturbed due to the underlying sterile soils that are eroding and exposed at the surface. No evidence of P-19-002586 was observed during recent surveys of the project area.

4.14.4 Regulatory Setting

This section includes applicable federal, State, regional, and City regulations.

4.14.4.1 Federal Regulations

Archaeological Resources Protection Act. The Archaeological Resources Protection Act was enacted in 1979 with the purpose of securing the protection of archaeological resources and sites on public lands and Native American lands, and to foster increased cooperation and exchange of information among governmental authorities, the professional archaeological community, and private individuals.

Native American Graves Protection and Repatriation Act. The Native American Graves Protection and Repatriation Act (NAGPRA) was passed in 1990 with the purpose of outlining a process for museums and federal agencies to return certain Native American cultural items (e.g., human remains, funerary objects, sacred objects, or objects of cultural patrimony) to lineal descendants and culturally affiliated Indian tribes. NAGPRA also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items on federal or tribal lands. While these provisions do not apply to discovery or excavations on private or State lands, the collection portions of NAGPRA may apply to cultural items if they are under the control of an institution that receives federal funding. NAGPRA also makes it a criminal offense to traffic in Native American human remains without right of possession or in cultural items obtained in violation of NAGPRA.

4.14.4.2 State Regulations

Native American Heritage Commission. In 1976, the California State Government passed Assembly Bill (AB) 4239, creating the NAHC. The NAHC is responsible for identifying and categorizing Native American cultural resources as well as preventing damage to designated sacred sites and associated artifacts and remains. Legislation passed in 1982 authorized the NAHC to identify a Most Likely Descendant (MLD) when Native American remains are found outside the boundaries of a designated cemetery. An MLD has the authority to make recommendations with regard to the treatment and disposition of the discovered remains.

California Public Resources Code Sections 5097.9–5097.991. California Public Resources Code (PRC) Sections 5097.9–5097.991 provide protection to Native American historical and cultural resources (including sanctified cemeteries, places of worship, religious sites, or sacred shrines) and sacred sites, and gives the NAHC enforcement authority.

Specifically, California PRC Section 5097.98 outlines procedures that must be followed in the event human remains are discovered. The County Coroner shall make a determination within 2 working days from the time the person responsible for the excavation, or their designee, notifies the County Coroner of the discovery or recognition of the human remains. If the County Coroner identifies the remains to be of Native American origin or has reason to believe that the remains are those of Native American origin, the County Coroner must contact the California NAHC within 24 hours. The NAHC representative will then alert a Native American MLD to conduct an inspection of the site and to determine the following course of treatment and action. Additionally, *State CEQA Guidelines* Section 15064.5 sets forth a procedure if human remains are found on land outside of federal jurisdiction.

California Health and Safety Code Section 7050.5. California Health and Safety Code (HSC) Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner’s authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American MLD to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Assembly Bill 52. Signed into law in September 2014, California AB 52 created a new class of resources—tribal cultural resources—for consideration under CEQA. Tribal cultural resources may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing in the CRHR. AB 52 requires that the lead CEQA agency consult with California Native American tribes that have requested consultation for projects that may affect tribal cultural resources. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a Negative Declaration, Mitigated Negative Declaration, or EIR. Under AB 52, a project that has the potential to cause a substantial adverse change to a tribal cultural resource constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level. As part of this process, consultation between the City of Rancho Palos Verdes Community Development Department and representatives of the Gabrielino Tongva Indians of California was conducted in November 2022. Through the consultation process, the Gabrielino Tongva Indians of California requested to be a part of the monitoring of all ground disturbances related to the project scope and presented a treatment plan for inclusion in the environmental analysis of the project. The Mitigation Measure MM TCR-1, includes provisions requiring the monitoring of ground disturbances by a City-approved archeologist and also requires the project

applicant to notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground-disturbing activities are about to commence and invite the tribe(s) to observe the ground-disturbing activities, if the tribes wish to monitor. Please see complete mitigation measure requirements on page 4.14-17 of this document.

4.14.4.3 Regional Regulations

There are no regional or County regulations applicable to cultural resources relevant to the proposed project.

4.14.4.4 Local Regulations

City of Rancho Palos Verdes General Plan. The City's General Plan Conservation and Open Space Element (City of Rancho Palos Verdes 2018b) provides a discussion of the basic ecological and environmental units dealing with the natural factors of land, climate, hydrology, biotic resources, and geotechnical factors, as well as the systematic relationships that must exist among them. The element discusses these environmental units as they apply individually to Rancho Palos Verdes and in combination with the preservation of natural resources and open space and of public health and safety. The element also focuses on cultural resources (historical and archeological resources) and their conservation. The following goals and policies related to tribal cultural resources are presented in the Conservation and Open Space Resources Element and are applicable to the proposed project:

- **Goal 2:** To protect and preserve all significant archaeological, paleontological, and historical resources within the City.
- **Policy 31:** Preserve locations of archeological and paleontological significance on site where possible. Allow salvage excavation of the site where preservation cannot be implemented.

City of Rancho Palos Verdes Municipal Code. The following Rancho Palos Verdes Municipal Code section is relevant to cultural resources:

- **Section 17.32.030, Uses and development permitted:** Establishes permitted uses and development types in the Open Space - Hazard (OH) zone, including preservation of areas of outstanding scenic, geologic, historic, or cultural value.

4.14.5 Thresholds of Significance

The thresholds for tribal cultural resources impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to tribal cultural resources if it would:

Threshold 4.14.1: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- (i) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1 (k).**
- (ii) **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

4.14.6 Project Impacts

Threshold 4.14.1(i): **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1 (k)?**

Less Than Significant Impact. The cultural resources survey conducted in 2022 confirmed the presence of a prehistoric deposit of marine shell and lithic debitage (P-19-002253) and a prehistoric marine shell and lithic debitage, as well as a historic refuse deposit consisting of construction debris (P-19-002586) on the project site.

The 2022 assessment concluded that neither of the prehistoric cultural resources (P-19-00253 and P-19-002586) were determined to be on or eligible for the CRHR or NRHP, and they are not historical resources pursuant to Section 15064.5 of the *State CEQA Guidelines*. A request for an SLF records search was submitted to the NAHC on July 13, 2020. The results were received on July 17, 2020, and were negative for the project area and its surrounding 0.5-mile study area.

Although the proposed project would not impact tribal cultural resources listed or eligible for listing in the CRHR within the project site. Despite there being no known tribal cultural resources on the project site as a result of the SLF records search, the potential for resources to be discovered is addressed below under Threshold 4.14.1(ii). The proposed project would not cause a substantial adverse change in the significance of a known tribal cultural resource, defined as a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR or in a local register of historical resources as defined in PRC Section 5020.1(k). No mitigation is required.

Threshold 4.14.1(ii): **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is**

geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation Incorporated. As noted in response to Threshold 4.14.1(i), above, the SLF was completed with negative results. Two cultural resources, a prehistoric deposit of marine shell and lithic debitage (P-19-002253) and a prehistoric marine shell and lithic debitage as well as a historic refuse deposit consisting of construction debris (P-19-002586), were also identified on the project site by the 2022 assessment.

The 2022 assessment confirmed that after the initial survey and the two subsequent focused supplemental surveys, no new or previously recorded cultural resources were observed or recorded within the project area. Based on the generally low average ground surface visibility of 0 to 45 percent throughout most of the project area due to vegetation and constraints to access related to topography and safety concerns, the presence of cultural resources should still be considered. All proposed hydrauger features and approximately 30-meter buffer survey areas around each location were observed, and no previously documented or newly discovered cultural resources were identified. Additionally, staging areas (including a materials stockpile area and a secondary staging area within the project site) were observed, but no evidence of cultural resources was observed. As stated under Threshold 4.14.1(i), neither P-19-002253 nor P-19-002586 meet any of the four criteria for listing on the NRHP or CRHR. P-19-002253 and P-19-002586 would not be impacted by the proposed project, which would avoid both sites.

On August 5, 2020, pursuant to the provisions of AB 52, the City provided consultation requests using the list provided by the NAHC. The GTIOC Tribal Council responded on August 13, 2020, with a request to engage in formal consultation with the City. The tribe shared concerns related to the potential for encountering the tribe's ancestral cultural resources on the proposed project site and requested monitoring of construction and treatment of any discovered tribal cultural resources. In 2022 the city had additional communications with a GTOC Tribal Council representative. Mitigation Measure MM TCR-1 has been identified as a result of consultation with the Native American tribe to address impacts to tribal cultural resources that may inadvertently be found during construction activities. Therefore, potential impacts to unknown tribal cultural resources on the project site would be reduced to less than significant.

4.14.7 Level of Significance Prior to Mitigation

There would be a potentially significant impact related to tribal cultural resources.

4.14.8 Regulatory Compliance Measures and Mitigation Measures

4.14.8.1 Regulatory Compliance Measures

No mitigation is required for the proposed project.

4.14.8.2 Mitigation Measures [Update language based on input from City]

MM TCR-1 Tribal Cultural Resources Monitoring. Prior to the commencement of construction, the City of Rancho Palos Verdes (City) approved qualified archaeologist to monitor all ground-disturbing activities associated with the project, including, but not limited to, grading, excavating, clearing, leveling and backfilling. The evaluation shall be conducted by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983) and qualified to identify subsurface tribal cultural resources. The archaeologist shall observe all ground-disturbing activities on the project site at all times the ground-disturbing activities are taking place. If ground-disturbing activities are simultaneously occurring at multiple locations on the project site, an archaeologist shall be required to monitor each location where the ground-disturbing activities are occurring.

Prior to the commencement of any ground-disturbing activities at the project site, the City, or its successor, shall notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground-disturbing activities are about to commence and invite the tribe(s) to observe the ground-disturbing activities if the tribes wish to monitor, at their own expense.

In the event that any subsurface objects or artifacts that may be tribal cultural resources are encountered during the course of the ground-disturbing activities, all such activities shall temporarily cease within the area of discovery, the radius of which shall be determined by the qualified archeologist, until the potential tribal cultural resources are properly assessed and addressed pursuant to the process set forth below:

1. Upon a discovery of a potential tribal cultural resource, an applicant, or its successor, shall immediately stop all ground-disturbing activities and contact the following: (1) all California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project; (2) and the City's Community Development Department, Planning Division.
2. If the City determines, pursuant to Public Resources Code Section 21704 (a)(2), that the object or artifact appears to be a tribal cultural resource in its discretion and supported by substantial evidence, the City shall provide any affected tribe a reasonable period of time, not less than 14 days, to conduct a site visit and make recommendations to the applicant, or its successor, and the City regarding

the monitoring of future ground-disturbing activities, as well as the treatment and disposition of any discovered tribal cultural resources.

3. The City, shall implement the tribe's recommendations if a qualified archaeologist, retained by the City concludes that the tribe's recommendations are reasonable and feasible.
4. In addition to any recommendations from the applicable tribe(s), the City-approved qualified archeologist shall develop a list of actions that shall be taken to avoid or minimize impacts to the identified tribal cultural resources substantially consistent with best practices identified by the Native American Heritage Commission (NAHC) and in compliance with any applicable federal, State, or local law, rule, or regulation.
5. If the City, or its successor, does not accept a particular recommendation determined to be reasonable and feasible by the qualified archaeologist, the City, , may request mediation by the City's mediator. The mediator must have the requisite professional qualifications and experience to mediate such a dispute. The City shall make the determination as to whether the mediator is at least minimally qualified to mediate the dispute. After making a reasonable effort to mediate this particular dispute, the City may: (1) require that the recommendation be implemented as originally proposed by the archeologist; (2) require that the recommendation, as modified by the City, be implemented as it is at least equally effective to mitigate a potentially significant impact; (3) require a substitute recommendation to be implemented that is at least equally effective to mitigate a potentially significant impact to a tribal cultural resource; or (4) not require the recommendation to be implemented because it is not necessary to mitigate any significant impacts to tribal cultural resources. The City shall pay all costs and fees associated with the mediation.
6. The City may recommence ground-disturbing activities outside of a specified radius of the discovery site so long as this radius has been reviewed by a qualified archaeologist and determined to be reasonable and appropriate.
7. The City may recommence ground-disturbing activities inside of the specified radius of the discovery site only after it has complied with all the recommendations developed and approved pursuant to the process set forth in Items 2 through 5, above.
8. Copies of any subsequent prehistoric archaeological study, tribal cultural resources study, or report detailing the nature of any significant tribal cultural resources, remedial actions taken, and disposition of any significant tribal cultural resources shall be submitted to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, and to the NAHC for inclusion in its Sacred Lands File.

Notwithstanding Item 8, above, any information determined to be confidential in nature by the City Attorney's Office, shall be excluded from submission to the SCCIC or the general public under the provisions of the California Public Records Act and the California Public Resources Code (PRC).

4.14.9 Level of Significance after Mitigation

Potential impacts to tribal cultural resources would be reduced to less than significant with implementation of Mitigation Measure MM TCR-1.

4.14.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for tribal cultural resources. The cumulative impact area for tribal cultural resources for the proposed project is the city of Rancho Palos Verdes. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing tribal cultural resources and would be reviewed for consistency with the General Plan goals and policies and Zoning Code development standards applicable to each site.

Potential impacts of the proposed project to unknown tribal cultural resources, when combined with the impacts of past, present, and reasonably foreseeable projects in Rancho Palos Verdes, could contribute to a cumulatively significant impact due to the overall loss of tribal cultural remains unique to the region. However, each development proposal received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts to tribal cultural resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. When resources are assessed and/or protected as they are discovered, impacts to these resources are less than significant.

As such, implementation of MM TCR-1 would ensure that the proposed project, together with cumulative projects, would not result in a significant cumulative impact to tribal cultural resources.

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4.15 UTILITIES AND SERVICE SYSTEMS

This section describes the potential for the project to require the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities.

4.15.1 Scoping Process

The City of Rancho Palos Verdes (City) received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there were notes generated from the scoping session. For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Five of the comment letters included comments related to utilities and service systems:

- The comment by the Abalone Cove Landslide Abatement District (ACLAD) received on January 15, 2021, requested that the project address all impacts to the Abalone Cove Landslide Area, including the redirection of hydrologic flows arising from project construction. ACLAD also requested that the City include the Abalone Cove Land Area in the EIR to mitigate any potential impacts to infrastructure in this area.
- The comment by Ken Dyda received on January 3, 2021, raises many concerns, including the current state of the existing water, gas, electricity, and wastewater systems. However, it does not make any requests or suggestions.
- The comment by the Los Angeles County Sanitation Districts received on December 15, 2020, requests that project plans incorporate the Districts' facilities and be sent to the Engineering Counter for the Districts review and comment.
- The comment by Alfred and Barbara Sattler received on December 15, 2021, requests that alternative measures that are proposed to avoid breaks to sewer lines be considered in the environmental review. It also requests that a cost-and-benefit comparison be conducted to compare the review, relocation, and reconfiguration of the sewer lines.

Various comments were also received orally at the scoping meeting on December 19, 2020, that pertain to utilities and service systems. Barbara Sattler requested that the sewer line along Palos Verdes Drive South be relocated. Peter Shaw made recommendations to install a second stormwater pipe under Palos Verdes Drive South to accommodate future movement. Sharon Yarber expressed concern about the security and safety of the sewer lines and requested that they be addressed in the environmental review.

4.15.2 Methodology

In order to evaluate the environmental impacts associated with the proposed project, citywide solid waste, wastewater, and water demands were compared to generation rates for the proposed project. The net difference between the citywide demand for utilities was then compared with the demand to generate the potential project-related increase in demand for solid waste, wastewater treatment, and water facilities. After determining that the proposed project would not generate a

demand for wastewater service, and because the demand for water and solid waste services generated from irrigation of restored native habitat and construction waste would be temporary and negligible compared to overall demand, the alteration in the drainage pattern was evaluated to determine whether diverting stormwater would lead to substantial impacts to stormwater drainage facilities.

The Los Angeles County Department of Public Works (LACDPW) has developed a time of concentration calculator, Hydrocalc, to automate time of concentration calculations as well as peak runoff rates and volumes using the Modified Rational Method design criteria as outlined in the LACDPW Hydrology Manual. The Hydrocalc Calculator was used to calculate the stormwater peak runoff flow rate for the project conditions by evaluating an individual subarea independent of all adjacent subareas. Due to the limitations of the software outlined in the LACDPW Hydrology Manual, which restricts the use of Hydrocalc for use on project sites smaller than or equal to 40 acres, Watershed Modeling Systems (WMS) software was used in the watershed analysis. WMS software by Aquaveo is a City and County of Los Angeles (County) approved software application used for watershed modeling. It utilizes the Modified Rational Method in calculating the peak flow rates and volumes for project sites larger than 40 acres. The analysis provided in the Hydrology and Water Resources Technical Report was utilized to inform whether the project would result in the relocation or construction of new or expanded stormwater facilities.

4.15.3 Existing Environmental Setting

4.15.3.1 Wastewater

The County of Los Angeles Consolidated Sewer Maintenance District (CSMD), the Los Angeles County Sanitation Districts, and the City's Public Works Department are responsible for operating, maintaining, and managing approximately 148 miles of sanitary facilities in Rancho Palos Verdes. In one portion of the city, Abalone Cove, the City of Rancho Palos Verdes is solely responsible for the ownership, operation, and maintenance of the wastewater system; however, the project area is not located in the portion maintained by the City. Through the sanitary sewer lines operated and maintained by CSMD and the City's Public Works Department, CSMD delivers over 500 million gallons per day (mgd) of wastewater to 10 wastewater treatment plants located throughout Los Angeles County. CSMD's service area includes 37 cities and 2 contracted cities (limited service on a contract basis) within Los Angeles County and unincorporated areas of the County. Wastewater generated by Rancho Palos Verdes is treated at the Joint Water Pollution Control Plant, located in Carson, California. This Joint Water Pollution Control Plant provides both primary and secondary treatment for approximately 300 million gallons per day for a population of approximately 3.5 million people throughout the County (including residents of Rancho Palos Verdes).

There are approximately 790,000 linear feet of wastewater conveyance pipelines, 17 primary lift stations, 44 grinder pumps, and approximately 3,707 manholes in the city. A trunk sewer connecting the eastern portion of the city with the western portion of the city runs along Palos Verdes Drive South, and a portion of it is within the project site. Within the project site, the trunk sewer has become distorted, warped, and broken due to constant land movements from the Portuguese Bend Landslide (PBL) complex (City of Rancho Palos Verdes 2018a).

4.15.3.2 Water Service

The California Water Service Company (Cal Water) is a public utility that provides water services to approximately 1.8 million people through over 481,000 connections. Cal Water provides water served by the West Basin Municipal Water District (West Basin MWD) to the City of Rancho Palos Verdes as one of the West Basin MWD's three investor-owned utilities. The West Basin MWD serves 17 cities in a 185-square-mile service area in coastal, southwest Los Angeles County. The West Basin MWD provides potable imported water and groundwater and recycled water to meet retail demand for potable and recycled water, and groundwater replenishment demand from the Water Replenishment District. Retail demand includes water directly consumed by the population, which includes, but is not limited to, residential, firefighting, and parks demand. Replenishment demand is the supply needed for maintaining the groundwater operations in the West Coast Basin and is not directly used by residents, municipalities, or industries.

The West Basin MWD's infrastructure provides water service to approximately 900,000 residents and more than 450 metered connections for municipal, commercial, and industrial use. Although the West Basin MWD provides groundwater supplies, all of its domestic water supply is imported water from the State Water Project (SWP) and the Colorado River through Metropolitan Water District of Southern California (MWD) pipelines and aqueducts. Approximately 15 to 20 percent of the supply used to meet overall demand within the West Basin MWD's service area comes from the existing groundwater supplies from the West Coast Groundwater Basin and the Central Groundwater Basin.

The groundwater replenishment and groundwater quality activities for the West Coast Basin and the Central Basin are managed by the Water Replenishment District (WRD). The WRD protects and preserves high-quality groundwater in the basins through cost-effective and environmentally sensitive management practices for the benefit of residents and businesses within the WRD's service area. The City of Rancho Palos Verdes is one of the 43 cities that overlie the Central Basin and West Coast Basin in southern Los Angeles County and is therefore overseen by the WRD. The city lies in the service area for Division 2 of the WRD.

4.15.3.3 Storm Drain

The City currently has a storm drainage system, which consists of streets and gutters, catch basins, and underground pipes, ditches, streams and creeks, pump stations, and channels. This system carries stormwater and runoff away from impermeable surfaces in Rancho Palos Verdes to designated drainage areas, including natural canyon systems with direct discharge to the ocean. There are 10 drainage areas in Rancho Palos Verdes, including Palos Verdes Estates (North), Rolling Hills Estates, Palos Verdes Estates (West), Ocean West, Ocean Southwest, Ocean South, Ocean Southeast, LA Harbor South, LA Harbor East, and LA Harbor North (City of Rancho Palos Verdes 2015a). The Master Plan of Drainage (MPD) is used as a long-range plan for the implementation and development of drainage facility improvements within the city of Rancho Palos Verdes. The project site is located within the Ocean South drainage area. In the past, insufficient maintenance in the drainage systems had increased infiltration of water into the landslide, increasing weight at the head of the slide and causing additional failures (City of Rancho Palos Verdes 2015a). Drainage facilities and other utilities are placed above ground in this portion of Rancho Palos Verdes. There are different stormwater pipe systems that serve to drain the runoff water from the north side of Palos

Verdes Drive South beneath the roadway into the ocean. These pipes are either corrugated metal pipe or corrugated polyethylene drainage pipes, and they are not in optimal condition; some of them are broken, not properly connected, or the inlet has lifted away from the low point (City of Rancho Palos Verdes 2015a).

4.15.3.4 Telecommunications

There are a number of cable and telephone service providers available to residents in the city. The City is primarily served by Verizon and AT&T, although residents may contract with any other telecommunications companies. Cable television is supplied by Verizon, AT&T, Cox Communications, and Frontier Telecommunications. All four companies use fiber-optic lines to provide instant access to numerous television channels, high-speed Internet, and digital telephone service for their customers. Both Verizon and AT&T currently have the standard copper lines and the newer fiber-optic lines (FIOS [Verizon] or U-Verse [AT&T]) available to residents. Unlike the classic copper lines that only service landline telephones, FIOS/U-Verse allow a single strand of fiber to support high-speed Internet, video, and telephone. Satellite television is also provided by companies such as DirectTV and DishNetwork, which provide similar access to television channels.

4.15.3.5 Solid Waste

The collection of residential solid waste in Rancho Palos Verdes is carried out by EDCO Disposal Corporation Disposal of solid waste formerly occurred at the Palos Verdes Landfill, located in Rolling Hills Estates, which operated under permit by the Los Angeles County Sanitation Districts as a sanitary landfill from May 1957 through December 1980. Disposal to this site has since ceased, and solid waste disposal now occurs at various landfills throughout Southern California (City of Rancho Palos Verdes 2018a). The City has also implemented a number of recycling programs to divert waste from landfills. With an environmental consciousness among its residents coupled with State mandates requiring reductions in the amount of refuse diverted to landfills (including Senate Bill [SB] 1374 and Assembly Bill [AB] 341), the limited potential for increased demand in the city should pose no problems in relation to collection of solid waste.

4.15.3.6 Natural Gas

Rancho Palos Verdes is part of the larger Southern California Gas Company (SoCalGas) system. The city is also included in two SoCalGas distribution sections, which function principally as sub-administrative districts and are responsible for all lines and service systems that feed from transmission lines to the point of delivery. The natural gas network in the city consists of distribution lines (supply lines, headers, and mains) and regulating stations. Discussions with SoCalGas representatives indicate that all gas lines are potentially dangerous if broken or severely damaged (City of Rancho Palos Verdes 2018a). Therefore, the distribution network in the PBL area, which includes the project site, is of critical concern. However, most lines are aboveground to facilitate constant inspection and periodic maintenance. SoCalGas uses an integrated grid system to preserve uniform flow and efficient service capabilities during maintenance or emergency. Natural gas is pumped, under high pressure, from the resource facility through transmission lines (none of which are in the city) to the distribution network that supplies city customers.

4.15.4 Regulatory Setting

4.15.4.1 State Regulations

California Water Code Sections 13550–13556. These sections of the State Water Code specify that local, regional, or State agencies shall not use water from any source for nonpotable uses if suitable recycled water is available as provided in Section 13550 of the State Water Code.

State Water Resources Control Board. Operation of the wastewater maintenance facilities in the city is subject to regulations set forth by the California Department of Health Services (DHS) and the State Water Resources Control Board (SWRCB). NPDES permits are required for operators of municipal separate storm sewer systems (MS4s), construction projects, and industrial facilities that discharge to surface waters within the City.

Senate Bill 1374. SB 1374 requires that the annual report submitted to the California Department of Resources Recycling and Recovery (CalRecycle) include a summary of the progress made in diversion of construction and demolition waste materials. In addition, SB 1374 required that CalRecycle adopt a model ordinance suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CalRecycle's model by default. However, adoption of such an ordinance may be considered by CalRecycle when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element (SRRE).

Assembly Bill 341. AB 341, enacted in 2011 and effective in 2012, changes the due date of the State agency waste management annual report to May. The bill makes a legislative declaration that it is the policy goal of the State of California that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by 2020.

2016 California Green Building Standards Code. On January 1, 2011, the County of Los Angeles adopted the California Green Building Standards Code (CALGreen Code), which sets forth recycling requirements for construction and demolition projects in the unincorporated areas of Los Angeles County. These requirements apply to any project requiring a construction, demolition, or grading permit. Currently, LACDPW enforces a diversion rate of 65 percent for construction and demolition debris.

4.15.4.2 Regional Regulations

Los Angeles County Construction and Demolition Debris Recycling and Reuse Program. On January 1, 2011, the County of Los Angeles adopted the CALGreen Code, which sets forth recycling requirements for construction and demolition projects in the unincorporated areas of Los Angeles County. These requirements apply to any project requiring a construction, demolition, or grading permit. According to the requirements, nonresidential construction projects consisting of commercial, industrial, or retail structures, as well as all tenant improvements, irrespective of the square footage, must recycle a minimum of 65 percent of the debris generated by weight.

4.15.4.3 Local Regulations

City of Rancho Palos Verdes Municipal Code. The following City of Rancho Palos Verdes Municipal Code sections are relevant to utilities and service systems:

- **Chapter 8.20, Solid Waste Collection and Disposal:** Establishes requirements for the collection and recycling of recyclable materials and collection and assists the city in complying with SB 1383 and the California Integrated Waste Management Act of 1989, which provide for mandatory commercial and organics recycling.
- **Chapter 12.18, Wireless Telecommunications Facilities in the Public Right-of-Way:** Provides a uniform set of regulations regarding the permitting, development, siting, installation, design, operation, and maintenance of wireless telecommunications facilities in the city's public right-of-way.
- **Chapter 13.04, Sewer System:** Establishes sewer service charges for Rancho Palos Verdes and sets regulations pertaining to the level of service the City must provide in order to reduce the potential landslide hazard and protect the public health, safety, and welfare of its residents.
- **Chapter 13.12, Telecommunications Regulatory Compliance:** Provides for the attainment of the objectives to authorize and manage reasonable access to the City's public rights-of-way and public property for telecommunications purposes on a competitively neutral and nondiscriminatory basis.
- **Chapter 15.04, Building Code:** Adopts and incorporates by reference the 2022 California Building Code (CBC) (which includes the CALGreen Code) as the building code of the City of Rancho Palos Verdes.
- **Chapter 15.08, Electrical Code:** Adopts and incorporates by reference the California Electrical Code, 2022 Edition, as the Electrical Code of the City of Rancho Palos Verdes.
- **Chapter 15.12, Plumbing Code:** Adopts and incorporates by reference the Uniform Plumbing Code as the Plumbing Code of the City of Rancho Palos Verdes.
- **Section 17.76.040, Grading Permits:** Provides for the permitting of reasonable development of land and minimization of fire hazards, ensuring the maximum retention of groundcover to aid in protection against flooding, erosion, earth movement, siltation and other similar hazards.

City of Rancho Palos Verdes General Plan. The primary purpose of the Circulation Element is to plan the transportation system needed to serve proposed development as defined in the Land Use Element of the City of Rancho Palos Verdes General Plan. The purpose of the Circulation Element is to present a plan to ensure that utilities and transportation, including public transportation services, are constantly available to permit orderly growth and to promote the public health, safety, and welfare. The following policies are relevant to utilities:

- **Goal 1:** Ensure adequate public utilities and communication services to all residents while considering environmental, aesthetic, and view impacts.
- **Goal 4:** Work with other jurisdictions and agencies to ensure that there are adequate storm drains, water systems, and sewer systems to serve the residents.
- **Policy 30:** Discourage the installation or extension of any infrastructure component into any area known to be hazardous unless appropriate liability safeguards (such as geological hazard abatement districts) are in place and adequate mitigation measures are incorporated into the design.
- **Policy 47:** Require that all flood control/natural water source interfaces and systems minimize erosion.
- **Policy 48:** Promote compliance with regulations controlling pollution impacts generated by development runoff.
- **Policy 49:** Promote compliance with regulations controlling discharge of wastewater into the ocean.
- **Policy 50:** Investigate alternative cable communications systems that take advantage of new technology, which could disseminate information and issues to communities and/or the City as a whole.
- **Policy 51:** Require the underground installation of cable communications.
- **Policy 52:** Balance the need to accommodate wireless communications coverage in the community with the need to protect and maintain the quality of the environment for residents. All new proposals to construct wireless communication facilities shall be reviewed using guidelines adopted and kept current by the Planning Commission and, where applicable, considering covenants, conditions, and restrictions (CC&Rs). These guidelines shall balance public and private costs and benefits to the greatest reasonable extent and encourage colocation of facilities and the use of evolving wireless communication technologies to minimize impacts.

4.15.5 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on utilities providers if it would:

- Threshold 4.15.1:** **Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;**

- Threshold 4.15.2:** Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Threshold 4.15.3:** Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Threshold 4.15.4:** Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- Threshold 4.15.5:** Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The IS, provided as Appendix A, substantiates that there would be no impacts associated with Thresholds 4.15.2 through Threshold 4.15.5. The proposed project may generate a small amount of wastewater and solid waste during construction activities, which would be temporary. The proposed project would not develop any buildings or structures for or result in an increase in population that would increase water demand, wastewater generation, or solid waste. The proposed project would not use additional water, generate wastewater, or produce solid waste that would exceed existing capacity. Further, the project would be constructed following all applicable laws, regulations, ordinances, and formally adopted City standards regarding solid waste disposal. Impacts would be considered less than significant and no further discussion is required.

4.15.6 Project Impacts

- Threshold 4.15.1:** Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project is intended to minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that would include relief of artesian pressure below landslide basal surface and minimize stormwater infiltration into the subsurface. The improvements include infilling surface fractures, constructing surface swales and flow reduction areas, and installing a subsurface water extraction system (hydraugers) by means of directional drilling. Additionally, the proposed project would install, replace, and refurbish underground piping to properly convey stormwater runoff. As stated in the IS, the proposed project would not develop any buildings or structures or result in an increase in population that would require additional water, wastewater, electrical, natural gas, or telecommunications facilities, and construction would require small amounts of water, which may result in wastewater generation. Although the proposed project would require minimal water supplies to be used during construction and temporary irrigation necessary to restore habitat, these activities that would

require a negligible amount of water would occur during the construction phases of the project and, therefore, would be temporary in nature and have no overall effect on long-term water demand.

One method of controlling the existing landslide, constructing flow reduction areas and underground pipes for surface water improvements, would implement a series of geotechnical engineering solutions to minimize stormwater infiltration into the subsurface by diverting stormwater in order to avoid further erosion at the project site. As mentioned above, the project site is within the Ocean South South drainage area, which is part of the Santa Monica Bay Watershed and is directly tributary to the Pacific Ocean. The drainage systems for this watershed consist mostly of unimproved open channels within Portuguese Bend Canyon, Altamira Canyon, and Paint Brush Canyon (City of Rancho Palos Verdes 2015a). The installation of “hydraugers,” which would be located beneath the active movement zone of the landslide area, would allow water to exit by controlled pressure flow and/or gravity flow through a storm drain system into the Pacific Ocean. This would decrease infiltration of water into the landslide and decrease the weight at the head of the slide, which causes additional failures. There would be five hydrauger systems, which would initially include aboveground water storage tanks. Collected water will be tested for water quality, including sedimentation and turbidity. Upon review of test results, it will be discharged to the ocean or used for other purposes within the Palos Verdes Nature Preserve, as appropriate. Depending on water quality, including sediment load, water gathered in these tanks would either be released into the existing on-site drainage or removed so water directly discharges to the ocean or the sewer system. Collected water would be tested to determine the appropriate disposal method.

The project would reduce the likelihood of landslide movement, which would alleviate health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure (including stormwater drainage facilities) at the project site. Therefore, project impacts to infrastructure and service systems would be less than significant and actually beneficial, as stabilization would reduce the likelihood of infrastructure relocation.

4.15.7 Level of Significance Prior to Mitigation

The proposed project would not result in any significant adverse impacts related to utilities and service systems, and no mitigation measures are required.

4.15.8 Regulatory Compliance Measures and Mitigation Measures

4.15.8.1 Regulatory Compliance Measures

No regulatory compliance measures are required for the proposed project.

4.15.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.15.9 Level of Significance after Mitigation

There would be no significant and unavoidable adverse impacts related to utilities and service systems. No mitigation is required.

4.15.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for utilities and service systems. The cumulative impact area for utilities and service systems related to the proposed project is the service area. Several residential and recreational development projects, as well as the General Plan Housing Element and Abalone Cove Sewer System Management Plan updates, are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to their own consistency analysis for policies and regulations governing utilities and service systems and would be reviewed for consistency with General Plan goals and policies and Zoning Code development standards applicable to each site.

For the reasons outlined above in Section 4.15.6, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to utilities and service systems. The proposed project and all related projects are required to adhere to City regulations designed to reduce and/or avoid impacts related to utilities and service systems. Furthermore, the landslide remediation project is designed to control land movement and protect the integrity of existing utilities and service systems. With compliance with these regulations, impacts related to utilities and service systems would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to utilities and service systems.

4.16 WILDFIRE

This section analyzes the potential wildfire impacts associated with implementation of the Portuguese Bend Landslide Remediation Project (proposed project). This section also addresses the proposed impacts to wildfire with consideration of local policies.

Information presented in this section is based on the Safety Element of the City of Rancho Palos Verdes' (City) General Plan (2018) and Municipal Code (October 18, 2022).

4.16.1 Scoping Process

The City received 26 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). In addition, there were notes generated from the scoping session. For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). Two comment letters included comments related to wildfire.

Both comment letters came from the general public and expressed general concerns regarding any added wildfire risk that could come as a result of the proposed project. In-depth analysis was requested to ensure there would be no further wildfire risk to the project site as a result of project implementation.

4.16.2 Methodology

The analysis in this section addresses wildfire issues that may be affected by the proposed project. Impacts to wildfire in and around the project site were determined by comparing goals and policies as adopted by the City's General Plan Safety Element and Municipal Code.

4.16.3 Existing Environmental Setting

4.16.3.1 General Wildfire Background

A wildfire is a nonstructural fire that occurs in vegetative fuels. Wildfire generally does not include prescribed or controlled fires set by firefighters to manage fuel loads in fire-prone landscapes. Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and structures are not designed and maintained to be ignition-resistant. A wildland-urban interface (WUI) is an area where urban development is in proximity to open space or "wildland" areas. The potential for wildland fires represents a hazard where development is adjacent to open space or in close proximity to wildland fuels or a designated Fire Hazard Severity Zone (FHSZ). Steep hillsides and varied topography can also contribute to the risk of wildland fires. Fires that occur in WUI areas may affect natural resources as well as life and property.

Wildfire ignition sources may include lightning, improperly managed campfires, cigarettes, arson, sparks from automobiles, power lines coming in contact with trees, lawnmowers and maintenance equipment, and other sources. Wildfire spread is often dramatically exacerbated when prolonged hot and dry weather conditions are coupled with strong wind events (Santa Ana winds). In Los Angeles County, the wildfire season has historically extended from late summer through fall, when most vegetative fuels are dried out and Santa Ana wind events are most common. However, climate change has increasingly led to conditions that are conducive to wildfire spread throughout much of

the year. Key factors in assessing wildland fire risk include potential ignition sources, building materials and design, community design, structural density, the presence of slopes and vegetative fuels, fire occurrence, and weather, as well as occurrences of drought (County of Orange and OCHA 2021).

4.16.3.2 Statewide Definition of Wildfire Hazard Zones

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the State through its Fire and Resources Assessment Program (FRAP). These maps place areas of California into different FHSZs based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection (generally located in unincorporated areas) is classified as a State Responsibility Area (SRA). Where local fire protection agencies (e.g., the Los Angeles County Fire Department) are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). CAL FIRE identifies the project site as an LRA. In addition to establishing local or State responsibility for wildfire protection in a specific area, CAL FIRE designates areas as very high fire hazard severity zones (VHFHSZs) or non-VHFHSZs. According to the CAL FIRE Very High Fire Hazard Severity Zone Maps for the Los Angeles County region, the entirety of the project site is designated as a VHFHSZ in an LRA (CAL FIRE 2011).

4.16.3.3 Wildfire Setting for the Existing Project Site

The project site is located along the south section of the Palos Verdes Peninsula within the city of Rancho Palos Verdes in Los Angeles County, California. The terminus of the active landslide complex, and generally the southwest boundary of the Portuguese Bend Landslide (PBL), is the Pacific Ocean. The proposed project consists of approximately 206 acres within the landslide complex (project site). The project site includes approximately 104 acres of land within the City-owned Palos Verdes Nature Preserve (Preserve), specifically within the Portuguese Bend Reserve and the Abalone Cove Shoreline Park and Reserve. The Palos Verdes Peninsula Land Conservancy (PVPLC) is the City's Preserve Habitat Manager pursuant to the City Council-adopted Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Three documented fires have occurred within the Preserve within the last half century. These include the 929-acre Crenshaw Fire, which occurred in 1973; the 179-acre San Clemente Fire, which occurred in 2005; and the 180-acre Palos Verdes fire, which occurred in 2009 (PVPLC 2009).

Within Rancho Palos Verdes, wildfire hazard areas are commonly identified in regions of the WUI, presenting a substantial hazard to life and property, especially in communities built within or adjacent to hillsides and mountainous areas (City of Rancho Palos Verdes 2018). Such fires can burn large areas and cause significant damage to structures and valuable watersheds, as well as result in an increased risk of mud flows. Ranges of the wildfire hazard are further determined by the fire ignition susceptibility resulting from natural or human conditions, as well as the difficulty of fire suppression. The wildfire hazard is also magnified by several factors related to fire suppression and control, such as the surrounding fuel load, weather, topography, and property characteristics. The Safety Element of the City's General Plan further states that while the hazards of wildfires are not as great in Rancho Palos Verdes compared to surrounding cities, the area does have a propensity for major fires, especially during the summer season. However, several assets are noted to minimize the

potential number and degree of damage of these fires. In Rancho Palos Verdes, this includes the low density of built-up areas, the quality of the fire control agencies, and high standards of fire prevention. Although the proposed project would control the existing Rancho Palos Verdes Landslide Complex area and would not construct any buildings or structures, the project construction would occur within an area designated as an LRA and a VHFHSZ, as mentioned above.

Surrounding the project site are residential uses that include the Portuguese Bend Beach Club to the south, the Portuguese Bend Community Association to the west, and the Seaview neighborhood to the east. East of the project site is Klondike Canyon and directly north is the Portuguese Bend Reserve, followed by additional residential uses. The southern portion of the project site can be accessed via Yacht Harbor Drive/Seawall Road, a private road within the Portuguese Bend Beach Club community. The Pacific Ocean is located to the south of the project site. Several residences exist adjacent to the northwestern boundary of the project site. Many neighborhoods are affected by this landslide, such as the Portuguese Bend Community and the Portuguese Bend Beach Club.

Public trails within the Preserve are located on the eastern side of the project site and on the seaward side of Palos Verdes Drive South. One park is located within the project site boundaries, the Abalone Cove Shoreline Park and Reserve, which is also designated as a State Ecological Preserve.

Vegetation within the project site consists of Saltbrush Scrub, Undifferentiated Coastal Sage Scrub, Dominated Coastal Sage Scrub, Exotic Woodland Shrub, and disturbed vegetation. Due to the land movement, surface fractures exist throughout the site. The southern end of the project site contains several coastal bluffs abutting the Pacific Ocean. Access to the project site is provided via Palos Verdes Drive South.

4.16.4 Regulatory Setting

4.16.4.1 Federal Regulations

National Incident Management System. The National Incident Management System (NIMS) provides a systematic, proactive approach to guide government agencies, nongovernmental organizations, and the private sector to work together to prevent, report, recover from, and mitigate the effects of emergency incidents, regardless of cause, size, location, or complexity, in order to reduce loss of life and property and harm to the environment. The City participates in NIMS, which improves its ability to prepare for and respond to potential incidents and hazard scenarios.

Healthy Forests Restoration Act. The federal Healthy Forests Restoration Act of 2003 appropriates funding to address the five main subcategories of the National Fire Plan (NFP): preparedness, suppression, reduction of hazardous fuels, burned-area rehabilitation, and State and local assistance to firefighters.

4.16.4.2 State Regulations and Policies

CAL FIRE and Resources Assessment Program. CAL FIRE publishes maps that predict the threat of fire for each county within the State. LRAs, SRAs, or Federal Responsibility Areas (FRAs) are classified as either VHFHSZs or non-VHFHSZs based on factors such as fuel availability, topography, fire

history, and climate. The 2019 Strategic Fire Plan for California was prepared by CAL FIRE to provide guidelines and objectives for wildfire reduction, property protection from wildfires, and human life protection from wildfires.

California Fire Code. The California Fire Code (CFC) includes regulations for emergency planning, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Fire safety requirements in the CFC include: installation of sprinklers in all high-rise buildings; establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas. The CFC is updated every 3 years.

California Strategic Fire Plan. This statewide plan is a strategic document that guides fire policy for much of California. The plan is aimed at reducing wildfire risk through pre-fire mitigation efforts tailored to local areas through assessments of fuels, hazards, and risks.

California State Hazard Mitigation Plan. The purpose of the State Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural- and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities, emphasizing partnerships among local, State, and federal agencies as well as the private sector.

California Government Code. California Government Code Section 51175 defines VHFHSZs and designates lands considered by the State to be very high fire hazard areas.

California Government Code Section 51189 directs the Office of the State Fire Marshal to create building standards for wildland fire resistance. The code includes measures that increase the likelihood of a structure withstanding intrusion by fire (e.g., building design and construction requirements that use fire-resistant building materials) and provides protection of structure projections (e.g., porches, decks, balconies, and eaves) and structure openings (e.g., attics, eave vents, and windows).

California Public Resources Code. The State's Fire Safe Regulations are set forth in California Public Resources Code (PRC) Section 4290, which include the establishment of SRAs. PRC Section 4291 sets forth defensible space requirements, which are applicable to anyone that "...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush covered lands, grass-covered lands, or land that is covered with flammable material" (PRC Section 4291(a)).

Assembly Bill 337. Per Assembly Bill (AB) 337, local fire prevention authorities and CAL FIRE are required to identify VHFHSZ in LRAs. Standards related to brush clearance and the use of fire-resistant materials in FHSZ are also established.

California Code of Regulations The California Code of Regulations (CCR) is the official compilations of the regulations adopted, amended, or repealed by State agencies pursuant to the Administrative Procedure Act (APA). The following titles of the CCR pertaining to fire and wildfire would apply to the proposed project:

CCR Title 8 (Industrial Relations). In accordance with CCR Title 8, Section 1270 and Section 6773 (Fire Prevention, and Fire Protection and Fire Equipment), the California Occupational Safety and Health Administration (Cal/OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

CCR Title 14 (Natural Resources). Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

CCR Title 19 (Public Safety). Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

Executive Order N-04-19. On January 9, 2019, Governor Newsom announced Executive Order (EO) N-04-19, which requires State agencies to identify innovative and sustainable solutions to address the State's wildfire crisis, such as upgraded fire detection technology.

Executive Order N-05-19. On January 9, 2019, Governor Newsom also announced EO N-05-19, which requires CAL FIRE and other State agencies to compile policy and regulatory recommendations concerning wildfire mitigation, emphasizing environmental sustainability and public health. EO N-05-19 requires the incorporation of socioeconomic analysis when conducting risk management of wildfires and mandates that agencies identify geographic areas with populations that are more vulnerable to the impacts of wildfires.

4.16.4.3 Regional Plans and Policies.

County of Los Angeles All-Hazards Mitigation Plan (2020). This plan is an effort undertaken by the County to mitigate the effects of natural hazards, including wildfires, and plan for resiliency in the future that respects the character and needs of the people who live and work in Los Angeles County.

4.16.4.4 Local Regulations and Policies

City of Rancho Palos Verdes General Plan. The Safety Element of the City of Rancho Palos Verdes General Plan (City of Rancho Palos Verdes 2018) discusses wildfire hazards and urban fire hazard potential in the city and identifies policies and goals that aim to reduce human and structure risks due to such events. The following policies would be applicable to the proposed project:

- **Goal 1.1:** Provide for the protection of life and property from both natural and human-made hazards
- **Goal 1.3:** Develop and enforce health and sanitation requirements and develop emergency communications and disaster preparedness programs to ensure the overall health and safety of all residents.
- **Policy 1.1:** Promote education and safety awareness pertaining to all hazards that affect Rancho Palos Verdes residents and adjacent communities.

- **Policy 1.2:** Adopt and enforce building and fire codes, ordinances, and regulations using best practices that include design and construction standards based upon appropriate levels of risk and hazard.
- **Policy 1.3:** Continue to require that all structures and facilities in the City adhere to City, State, and National regulatory standards such as the California Building and Fire Codes and other applicable fire safety standards.
- **Policy 1.4:** Coordinate with the Los Angeles County Fire Department's Prevention Services to ensure that proper defensible space and an adequate fuel modification program is actively being implemented and enforced on properties within the Very High Fire Hazard Severity Zone.
- **Policy 1.6:** Encourage cooperation among adjacent communities to ensure law enforcement and fire protection mutual aid in emergency situations.
- **Policy 1.9:** Develop and implement stringent site design and maintenance criteria for areas of high fire hazard potential in coordination with fire protection agencies.
- **Policy 1.12:** Coordinate with local, state, and federal agencies to update emergency, evacuation, and hazard mitigation plans, as necessary.
- **Policy 1.15:** Ensure that adequate emergency treatment and transportation facilities are available to all areas of the City.
- **Policy 1.17:** Ensure the availability of paramedic rescue and fire suppression services to all areas of the City.
- **Policy 1.18:** Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan to cope with major disasters.
- **Policy 1.27:** Establish cooperative working relationships among public agencies with responsibility for flood, fire, and climate change protection.

City of Rancho Palos Verdes Municipal Code. Chapter 8, Fire Code, of the City of Rancho Palos Verdes Municipal Code (City of Rancho Palos Verdes 2022) adopts the 2017 CFC in its entirety. This chapter of the Municipal Code also provides violations and penalties to be faced by any persons that do not comply with the City's Fire Code.

4.16.5 Thresholds of Significance

The thresholds for wildfire impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The proposed project may be deemed to have a significant impact with respect to wildfire if it would:

- Threshold 4.16.1:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:
- (a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
 - (b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
 - (c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
 - (d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

The IS, provided in Appendix A, substantiates that there would be no impacts associated with Threshold 4.16.1 (c). The project would not require installation of infrastructure that might exacerbate fire risk. Thus, Threshold 4.16.1(c) will not be addressed in the following analysis.

4.16.6 Project Impacts

According to CAL FIRE, the project site is located in an LRA that is designated as a VHFHSZ. Further, the City's General Plan (2018) and the Los Angeles County Department of Public Works (LADPW) identify Palos Verdes Drive South as a local disaster route. For these reasons, further analysis has been provided for the following thresholds below.

- Threshold 4.16.1:** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:
- (a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The City of Rancho Palos Verdes has published an Emergency Operations Plan (EOP) (2018) and a Multi-Jurisdictional Hazard Mitigation Plan (2020) with the neighboring City of Rolling Hills Estates. These available plans do not provide details on specific evacuation routes, but as noted above from information provided by the LADPW and the City's General Plan, Palos Verdes Drive South is the main disaster evacuation route that would be utilized for any potential evacuations that occur at the project site. These plans also set forth procedures and protocols that the emergency response agencies would implement to safely evacuate the affected populations. One of the primary project objectives is to stabilize an existing landslide that, if not controlled, could result in restrictions or closures of portions of Palos Verdes Drive South. This arterial, as previously noted, is a local disaster evacuation route. Project implementation would provide additional protection of this important component of the evacuation network.

As noted in Section 4.13, Transportation, immediate access to the construction site is provided via Palos Verdes Drive South. Four study intersections were selected for the project's traffic analysis in order to determine potential traffic impacts related to the proposed construction project:

1. Barkentine Road/Palos Verdes Drive South
2. Narcissa Drive/Palos Verdes Drive South
3. Peppertree Drive/Palos Verdes Drive South
4. Forrestal Drive-Trump National Drive/Palos Verdes Drive South

As analyzed in Section 4.13, the project will generate minor temporary construction trips, which will not impact emergency response and/or emergency evacuation.

The Los Angeles County Sheriff and Los Angeles County Fire Department are the local agencies that would oversee emergency response and emergency evacuation that may occur at the project site. Any evacuations involving the project site or the areas surrounding the project site would involve the use of these roadways, but mainly Palos Verdes Drive South as the main arterial that crosses through the project site.

Palos Verdes Drive South is designated by the General Plan as a disaster route (City of Rancho Palos Verdes 2018). Analysis provided in Section 4.13, Transportation, details the potential for portions of Palos Verdes Drive South to be affected temporarily during construction. Temporary lane closures are not anticipated to occur throughout the course of project construction. If necessary, however, any such lane closures are expected to occur outside of the weekday a.m. and p.m. peak hours so as to maintain roadway capacity when the street system is typically most heavily constrained. Flagmen would be used to control traffic movement during the ingress or egress of trucks and heavy equipment to/from the construction site. A Construction Traffic Control Plan will be prepared for the project, which will ensure adequate emergency access is maintained.

For these reasons, the proposed project is not expected to substantially impair implementation of an adopted emergency response plan or emergency evacuation plan during a wildfire event that impacts the project area or the region. The impact would be less than significant.

Threshold 4.16.1: **If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:**

- (b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

Less Than Significant Impact. Topography influences the movement of air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildland fire will likely double. Wind events magnify the risks of wildfire and also have the potential to expose inhabitants of Rancho Palos Verdes to elevated pollutant concentrations from a wildfire. Other factors that could exacerbate wildfire risks include fuel load, lack of fire breaks (clearance), and structure design.

Slope. The proposed project aims to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface. Thus, the proposed improvements would include elements such as infilling surface fractures to reduce the infiltration of surface water into the ground, constructing surface swales and retention areas to collect, slow, and divert surface water to the ocean, and installing a complex subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower water levels within the landslide mass. Although no physical habitable structures are proposed to be developed at the project site, the surrounding area still contains various ridgelines and slopes, which may have the potential to contribute to exacerbating wildfire risks based on the nature of their topography. The proposed project does not involve changes to existing overall slope characteristics.

Prevailing Winds. Rancho Palos Verdes is located along the Pacific Coast and experiences wind events on a regular basis. Prevailing winds in the city blow from a north-northeast or northeast direction to a south-southwest or southwest direction, with winds averaging up to 17 miles per hour daily (Meteoblue n.d.). In the event a wildfire were to commence to the northeast of the project site, prevailing winds could push the wildfire toward the project site. If a wildfire were to commence to the west, northwest, or southwest of the project site the prevailing winds would more than likely spread the wildfire away from the project site to the west. During wildfire and wind events, the South Coast Air Quality Management District staff monitors and offers air quality alerts, advisories, forecasts, and an interactive online map to view current air quality conditions in the region. The SCAQMD's tools allow the general public to make informed decisions about air quality issues created by smoke from wildfires and help the general public in deciding to leave the area for better air quality options during such events. Based on the average wind speed and direction, any smoke created by a wildfire in the vicinity of the project site would more than likely dissipate quickly and therefore would not expose nearby residents of the site to pollutant concentrations of wildfire smoke.

Other Factors. Wildfire spread can be exacerbated by fuel loads, lack of fire breaks, or poor fire-design of structures. During a wildfire, fuel loads such as plant materials, grasses, shrubs, trees, dead leaves, and fallen pine needles can act as fuel that exacerbates a wildfire. The proposed project aims to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include infilling surface fractures to reduce the infiltration of surface water into the ground, relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface by constructing surface swales and installing a complex subsurface water extraction system (hydraugers) to alleviate artesian pressure and also lower water levels within the landslide mass. The geotechnical features associated with the proposed project would be developed consistent with the applicable requirements from the State of California's CCR that focus on fire reduction design features. Furthermore, the proposed project will not create any new physical building structures that would be prone to wildfire risks due to the topographic area of the project site. The proposed project aims to maintain the integrity of the current topography of the area and would ultimately not create an environment that further exacerbates wildfire risks more than the current landscape does.

Based on the analysis provided above, the proposed project itself would not exacerbate existing wildfire risks due to changes in landscape slope, prevailing winds, location, or other conditions conducive to wildfire ignition and spread. As such, the project would not contribute to exposing nearby residents to impacts associated with downwind pollutant concentrations from a wildfire or uncontrolled wildfire spread. Further, the proposed project would not permanently affect the existing trail network within the project site, and there would be no permanent impacts on the use of these trails as escape routes for residents/trails users or use by emergency vehicles for fire suppression activities in the potential event of a wildfire occurrence. Therefore, this impact would be less than significant.

Threshold 4.16.1: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

(d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less Than Significant Impact.

Landslides. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking but can also occur as a result of erosion and downslope runoff caused by rain following a fire. The project site is currently experiencing landslide movement. The purpose of the proposed project is to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface by constructing surface swales and installing a complex subsurface water extraction system (hydraugers) to alleviate artesian pressure and also lower water levels within the landslide mass. Therefore, the construction associated with the proposed project would not expose people or structures to significant risks, including downslope landslides, as a result of runoff, post-fire slope instability, or drainage changes. The project's primary purpose is to stabilize an existing landslide. In a post-fire situation, the remediated slope conditions would be superior in terms of controlling slope instability compared to the existing setting. There would be no impact to project occupants or nearby residents, or to workers related to post-wildfire landslide risks, and this impact would be less than significant.

Flooding. According to the Federal Emergency Management Agency (FEMA) Flood Hazard Map Panel 06037C2007G (effective April 21, 2021), the project site is within Zone X, Area of Minimal Flood Hazard. Areas in Zone X, Area of Minimal Flood Hazard are not considered a Special Flood Hazard Area (SFHA) by FEMA (FEMA 2021).

In the unlikely event that a wildfire should spread at the project site, it is not expected that the project would contribute any additional runoff or sedimentation to any nearby downstream drainages. The proposed project aims to minimize landslide movement in the PBL area by implementing a series of recommended geotechnical engineering solutions that will include

relief of artesian pressure below landslide basal surface and minimizing stormwater infiltration into the subsurface by constructing surface swales and installing a complex subsurface water extraction system (hydraugers) to alleviate artesian pressure and also lower water levels within the landslide mass. The nature of the proposed project is intended to minimize landslide movement in an effort to reduce any future risk for flooding at the project site. Therefore, the current risk of downslope or downstream flooding as a result of runoff, post-fire slope instability, or drainage changes would not be exacerbated with implementation of the proposed project. The inclusion of the flow reduction component as part of the project description provides additional risk reduction related to downstream flooding in a post-wildland fire condition. Impacts to nearby residents or off-site occupants in Rancho Palos Verdes related to post-wildfire flooding risks would be less than significant.

4.16.7 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts for wildfire. However, the following compliance measures are existing requirements in the CCR that are applicable to the proposed project and are considered in the analysis of potential impacts related to wildfire spread. These requirements are considered to be mandatory compliance measures; therefore, they are not mitigation measures.

4.16.8 Regulatory Compliance Measures and Mitigation Measures

4.16.8.1 State Regulatory Compliance Measures

Compliance Measure WF-1 The proposed project would comply with the titles outlined in the California Code of Regulations (CCR) that establish guidelines for emergency fire response, fire prevention, and construction material standards.

4.16.8.2 Mitigation Measures

No mitigation is required for the proposed project.

4.16.9 Level of Significance after Mitigation

The proposed project would have no significant unavoidable adverse impacts related to wildfire. No mitigation would be required.

4.16.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for wildfire. The cumulative impact area for wildfire related to the proposed project is the city of Rancho Palos Verdes. Several residential and commercial development projects are approved and/or pending within the city. Each of these projects, as well as all proposed development in Rancho Palos Verdes, would be subject to its own consistency analysis for policies and regulations governing wildfire regulations and would be reviewed for consistency with General Plan goals and policies and Zoning Code development

standards applicable to each site. Furthermore, the proposed project does not alter the existing wildland fire conditions on the project site or increase the potential for wildland fires to occur.

For the reasons outlined above in Section 4.16.7, Project Impacts, implementation of the proposed project would not result in a significant cumulative impact related to wildfire. The proposed project and all related projects are required to adhere to City and State regulations designed to reduce and/or avoid impacts related to wildfire. With compliance with these regulations, impacts related to wildfire would be less than cumulatively significant. Therefore, implementation of the proposed project would not result in a significant cumulative impact related to wildfire.

5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would “feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant impacts of the project and evaluate the comparative merits of the alternatives.”¹ This chapter identifies potential alternatives to the project, evaluates the potential impacts of each alternative, and compares the potential impacts of each alternative against the proposed project’s impacts, as required by CEQA.

Key provisions of the *State CEQA Guidelines* on alternatives (Section 15126.6[b] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR:

- The EIR need not consider every conceivable alternative; rather, it must consider a reasonable range of potentially feasible alternatives to the project even if “these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.” An EIR is not required to consider alternatives that are infeasible (Section 15126[a]).
- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (Section 15126.6[b]).
- The range of potential alternatives shall include those that would feasibly accomplish most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” A brief discussion identifying the rationale for the alternative selected, as well as the justification for the rejection of any alternatives, should be provided in an EIR. Among the factors to reject alternatives from consideration in an EIR are: failure to achieve project objectives, infeasibility, or inability to avoid significant environmental impacts (Section 15126.6[c]).
- An EIR must include sufficient information about each alternative to allow meaningful analysis and comparison with the project. If an alternative would cause one or more significant effects in addition to those caused by a project, the significant effects of the alternative must be discussed, though in less detail than the significant effects of the project (Section 1126.6[d]).
- The specific alternative of “No Project” shall also be evaluated along with its impact (Section 15126.6[e][1]). The “No Project” analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the “No

¹ *CEQA Guidelines* Section 15126.6.(a).

Project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (Section 15126.6[e][2]).

- The range of alternatives required in an EIR is governed by the “rule of reason,” requiring the identification of only those alternatives necessary to permit a “reasoned choice,” which in turn will foster meaningful public participation and informed decision making (Section 15126.6[f]).

“Feasible” has been defined as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” Among the factors that may be taken into account when addressing the feasibility of alternatives are: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent) (Section 15126.6[f][1]).

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (Section 15126.6[f][2][A]).

If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include the reasons in the EIR. For example, in some cases, there may be no feasible alternative locations for a geothermal plant or mining project, which must be in close proximity to natural resources at a given location (Section 15126.6[f][2][B]).

- An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (Section 15126.6[f][3]).

Pursuant to the guidelines stated above, several alternatives to the proposed project are considered and evaluated in this EIR. These alternatives were developed in the course of project planning and environmental review. The discussion in this section provides:

1. A description and analysis of impacts for each of the alternatives considered;
2. A comparative analysis of each alternative that focuses on the potentially significant environmental impacts of the proposed project (the purpose of this analysis is to determine whether alternatives are capable of further reducing the significant environmental impacts of the project to a less than significant level); and
3. Conclusions regarding the alternative’s: (1) ability to avoid or substantially lessen the potentially significant impacts of the project; (2) ability to attain the project objectives (as stated below); and (3) merits compared to the merits of the proposed project.

The City of Rancho Palos Verdes (City), acting as the CEQA Lead Agency, is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. The range of alternatives addressed in an EIR is governed by a “rule of reason,”

which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. Of the alternatives considered, the EIR needs to examine in detail only those the Lead Agency determines could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

5.1.1 Summary of the Proposed Project

The proposed project is intended to minimize movement in the existing landslide area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimizing stormwater infiltration into the subsurface. Thus, the proposed improvements would include infilling surface fractures to reduce the infiltration of surface water into the ground; constructing surface swales and retention areas to collect, slow, and convey surface water to the ocean; and installing a subsurface water extraction system (hydraugers) by means of directional drilling to alleviate artesian pressure and also lower groundwater levels within the landslide mass.

Existing surface fractures within the project site are a few feet wide, and some are as deep as 15 or more feet. These fractures collect stormwater runoff that discharges into the ground. The stormwater runoff enters the fractures, where it percolates into the ground and becomes part of the groundwater, which exacerbates landslide movement. The surface fracture infilling will control stormwater runoff infiltrating the ground and will help in solving one aspect of the landslide movement.

The proposed project also includes installing new surface water improvements and refurbishing existing pipes to minimize the soil erosion loss and stormwater ponding and infiltration that contributes to landslide movement. These surface water improvements and refurbishments consist of the construction of a network of engineered swales that extend south from Burma Road and traverse the project site, the construction of a flow reduction area that would essentially act as a detention basin that would help manage the flow of excess stormwater runoff, the replacement and refurbishment of existing underground piping that conveys stormwater runoff through the project site, and the installation of hydraugers, which would alleviate artesian water pressure below the Portuguese Bend Landslide (PBL).

The project requires the following entitlement actions and permits for construction and operation:

- Clean Water Act Section 404 Permit
- Clean Water Act Section 401 Water Quality Certification
- California Fish and Game Code Section 602 (Streambed Alteration Notification)
- Construction General Permit Order 2009-0009-DWQ
- Potential local or County of Los Angeles (County) permits, as applicable
- Grading permit
- Local Coastal Plan, as applicable
- Well/borehole permit

Refer to Section 3.0 of this EIR for a comprehensive description of the project's characteristics.

5.1.2 Project Objectives

The fundamental purpose of the proposed project is to minimize landslide movement in the PBL area. Specific objectives related to this fundamental purpose include:

- Identifying geotechnical engineering solutions that are environmentally sensitive, will substantially reduce the risk of damage to public and private property, and would allow for the significant improvements of roadway and infrastructure, safety, and stability projects
- Reducing substantial human health risk and improving public safety
- Reducing the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts
- Reducing the likelihood of major landslide movement that would damage and render a major arterial street, Palos Verdes Drive South, unusable, potentially leading to major detours, additional vehicle emissions associated with additional miles traveled, major disruptions to traveling motorists, and loss of productivity throughout the City of Rancho Palos Verdes and its surrounding communities
- Reducing the likelihood of surface fractures that would damage and fragment sensitive species habitat, thereby enhancing native vegetation in the Palos Verdes Nature Preserve (Preserve)
- Alleviating artesian water pressure below the PBL area, which is believed be a major contributing factor to landslide movement, and controlling major surface water runoff
- Reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean that contribute to negative impacts on the coastal and marine environments
- Selecting remedy options that are consistent with the natural visual characteristics of the surrounding Preserve

5.2 ALTERNATIVES CONSIDERED BUT REJECTED

In determining an appropriate range of alternatives to be evaluated in the EIR, several possible alternatives were considered by the City and rejected because they could not accomplish the basic objectives of the project as detailed in Section 5.1.2; were considered infeasible, or would not reduce the significant impacts of the proposed project because there are no significant impacts associated with the proposed project. Factors that may be considered when addressing the feasibility of alternatives include failure to meet most of the stated project objectives, infeasibility, or inability to avoid environmental effects.¹

¹ CEQA Guidelines Section 15126.6(c).

5.2.1 No Project Alternative

Under the No Project Alternative, the project site would remain in its current condition. No new improvements or ground disturbance would occur. The proposed discretionary actions would not be required. Due to the Landslide Moratorium Ordinance, the project site would remain undeveloped. The PBL complex would continue to move at various rates, displacing the land seaward and continuing to damage utilities, roadways, habitat, infrastructure, and private properties. This alternative would not achieve any of the project objectives, including minimizing landslide movement, preserving infrastructure and open lands, preserving natural vegetation and recreational facilities within the Preserve, reducing soil erosion losses, or reducing health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure. This alternative would not satisfy the stated project objectives of identifying geotechnical engineering solutions to minimize landslide movement in the PBL area, improving public safety, reducing the likelihood of major landslide movement, alleviating artesian water pressure below the PBL area, or reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean. The discussion below summarizes the impacts that the No Project Alternative would have on each of the environmental topics.

5.2.1.1 Aesthetics

The No Project Alternative would not result in any construction activities that may have a substantial adverse impact on any scenic vistas. There are no State scenic highways in the project area, and any trees, rock outcroppings, or historic buildings would not be impacted. The visual character and public views provided by the project site would remain the same, including remnants of damaged dewatering wells and drains, and new sources of light or glare would not be introduced. However, the No Project Alternative would result in continued high rates of erosion, continued fragmentation of habitat, and continual alteration of the landscape, which would result in changes to the project area's aesthetic values.

5.2.1.2 Air Quality

The No Project Alternative would not result in any construction or operation activities which may conflict with or obstruct an air quality plan. The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, a major arterial and an emergency evacuation route. The closing of Palos Verdes Drive South would result in a greater than 18-mile detour that would increase vehicle congestion and vehicle emissions, which would create air quality and greenhouse gas (GHG) emission impacts. Sensitive receptors would not become exposed to any additional pollutant concentrations or objectionable odors beyond the existing conditions on the project site.

5.2.1.3 Biological Resources

The No Project Alternative would not reduce the likelihood of sudden major movement that would break the two 14-inch forced main sanitary sewer trunk lines that run alongside the Palos Verdes Drive South roadbed, which would result in dumping raw sewage into nearby Abalone Cove, a State-designated Ecological Reserve and onto the shoreline of the Pacific Ocean, causing an unprecedented ecological disaster. The No Project Alternative would not reduce the likelihood of surface fractures that would damage and fragment sensitive species habitat. The project area in its

current condition is subject to natural drainage courses shifting, which leads to erosion and loss of native habitat.

5.2.1.4 Cultural Resources

The No Project Alternative would not result in any construction activities that may result in an impact on historical or archaeological resources or human remains that are located on the project site. The project site would remain in its existing condition, and no ground-disturbing activities would occur. However, continued land movement could expose and destroy unknown historical or archaeological resources or human remains within the project area.

5.2.1.5 Energy

The No Project Alternative would not result in any construction activities that may result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy. State or local plans related to energy efficiency would not be obstructed, and the project site would remain in its existing condition. The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, a major arterial and an emergency evacuation route. The closing of Palos Verdes Drive South would result in a greater than 18-mile detour, which would result in increased fuel consumption associated with vehicular trips.

5.2.1.6 Geology and Soils

The No Project Alternative would not reduce the likelihood of sudden major movement caused by the PBL complex on which the project site is located. The No Project Alternative would not reduce the likelihood of surface fractures that would damage and fragment the earth, and the project site would remain in its current condition, which is subject to natural drainage courses shifting, which leads to erosion. Additionally, the sudden major land movements caused by the landslide complex may directly destroy unique paleontological resources and geologic features found on the project site.

5.2.1.7 Greenhouse Gas Emissions

The No Project Alternative would not result in any construction or operation activities that may conflict with or obstruct any plan or regulation adopted for the purpose of reducing GHG emissions. The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route, which would create a greater than 18-mile detour that increases vehicle congestion and GHG emissions.

5.2.1.8 Hazards and Hazardous Materials

The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route, creating a greater than 18-mile detour that would impair implementation of emergency evacuation plans in Rancho Palos Verdes. The No Project Alternative would not reduce the likelihood of a break in the forced sewer main lines that would result in dumping raw sewage into nearby Abalone Cove, a State-designated Ecological Reserve and the Pacific Ocean with its shoreline. The No Project Alternative would not address the continued damage to private residences, resulting in damage to sewer holding tanks and gas lines

that may result in the release of hazardous materials especially if the residential structure is damaged. Major landslide movement would also increase the likelihood of a wildfire from power lines in this high wildfire severity zone.

5.2.1.9 Hydrology and Water Quality

The No Project Alternative would not reduce the likelihood of sudden major movement that would break the two 14-inch forced main sanitary sewer trunk lines that run alongside the Palos Verdes Drive South roadbed, which would result in dumping raw sewage into nearby Abalone Cove, a State-designated Ecological Reserve and the Pacific Ocean with its shoreline. The project area in its current condition is subject to natural drainage courses shifting, which leads to erosion and loss of native habitat. The No Project Alternative would not increase the functions and values of drainage features that would be improved in the project condition. The project involves the removal of underground pipe and converting the flow to an open vegetated swale, which will improve functions and values of the drainage features on site.

5.2.1.10 Land Use and Planning

The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route, creating a greater than 18-mile detour that that would physically divide the community. The No Project Alternative would not address the continued damage to existing residences and the movement of building and infrastructure improvements onto downslope parcels. This continued landslide movement results in a physical division of the community, resulting in areas that cannot be traversed.

5.2.1.11 Noise

The No Project Alternative would not result in any construction or operation activities that may generate substantial temporary increases in ambient noise levels in the project vicinity in excess of standards established in the local General Plan or Noise Ordinance. The No Project Alternative would also reduce the likelihood of generation of ground-borne vibration or noise.

5.2.1.12 Recreation

The No Project Alternative would not reduce the likelihood of the PBL impacting local recreational trails in the project area and surrounding vicinity. Landslide movement could result in the closing of trails and limit public access to the recreational attributes of the project area, especially in areas where fissures exist and become a public access hazard.

5.2.1.13 Transportation and Traffic

The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route, creating a greater than 18-mile detour that would result in inadequate emergency access, increase vehicle congestion, and eliminate a key arterial roadway that provides a critical circulation link, including for students traveling to schools operated by the Palos Verdes Peninsula Unified School District and other private schools in the area. Palos Verdes Drive South, a major arterial access and evacuation route for

several cities with an average traffic volume of 14,381 trips per day, goes directly through the landslide area.

5.2.1.14 Tribal Cultural Resources

The No Project Alternative would not result in any construction activities that may result in an impact on tribal cultural resources located on the project site. The project site would remain in its existing condition, and no ground-disturbing activities would occur.

5.2.1.15 Utilities and Service Systems

The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South or break the two 14-inch forced main sanitary sewer trunk lines that run alongside the Palos Verdes Drive South roadbed and serve approximately 8,900 homes in Rancho Palos Verdes and Palos Verdes Estates. Additionally, a break and interruption in the main sanitary sewer trunk line will also disrupt businesses such as Terranea Resort, retail outlets at Golden Cove Shopping Center, places of worship, Wayfarers Chapel, public and private schools, and the City's Palos Verdes Interpretive Center (PVIC).

5.2.1.16 Wildfire

The No Project Alternative would not reduce the likelihood of sudden major movement that would sever Palos Verdes Drive South, an emergency evacuation route, creating a greater than 18-mile detour that that would impair implementation of emergency evacuation plans in the city. Additionally, the No Project Alternative would not reduce the likelihood of damage due to the landslide complex, which may expose people and structures to significant risks, including downslope or downstream flooding and landslides as a result of runoff, post-fire instability, and drainage changes. Major landslide movement would also increase the likelihood of a wildfire from damaged or fallen power lines in this State-designated very high wildfire severity zone.

Therefore, the No Project Alternative was not considered viable and is not considered for further analysis.

5.2.2 Reduced Project Alternative

The Reduced Project Alternative would consist of the elimination of the flow reduction area from the proposed project elements. It would still implement all other elements, including surface fracture infilling, drainage swales, replacement and refurbishment of underground pipes, and installation of hydraugers. This alternative would reduce the project footprint by approximately 10 acres because it would remove the flow reduction basin, but the network of swales would remain. The discussion below summarizes the impacts that the Reduced Project Alternative would have on each of the environmental topics.

5.2.2.1 Aesthetics

The Reduced Project Alternative would not result in impacts to scenic trees, rock outcroppings, historic buildings, or other known scenic sources because the project site does not contain these sources. Further, because the project site is largely undeveloped and within an urbanized area, the

construction of the project would prevent the hillside from eroding into the ocean, which would provide long-term improvements for the visual character of the area. Additionally, the Reduced Project Alternative would have a less than significant impact on scenic vistas because the landslide remediation is consistent with all applicable General Plan goals and policies governing aesthetics and scenic quality. The Reduced Project Alternative would also be consistent with all applicable zoning regulations governing aesthetics and scenic quality on the property. However, the Reduced Project Alternative would result in increased erosion downstream of Palos Verdes Drive South, which would reduce the aesthetic value of biological and water resources. Without implementation of the low-flow reduction facility, the approximately 10-acre area proposed for the project component would be subject to increased velocities, resulting in erosion, bi-furcation, and disturbance of native vegetation, resulting in decreased project site aesthetic values.

5.2.2.2 Air Quality

The Reduced Project Alternative would not conflict with or obstruct implementation of the 2016 Air Quality Management Plan (AQMP) because (1) the Reduced Project Alternative's construction emissions would not exceed the South Coast Air Quality Management District's (SCAQMD) regional significance thresholds, and (2) the Reduced Project Alternative is consistent with the current General Plan land use designations on the project site and would not exceed the growth assumptions in the AQMP. The Reduced Project Alternative would not exceed the SCAQMD construction emissions thresholds and would also not exceed the Localized Significance Thresholds (LSTs) for construction emissions. The Reduced Project Alternative would comply with SCAQMD Rule 1113, which limits volatile organic compounds (VOCs) in solvents.

5.2.2.3 Biological Resources

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in major loss of habitat due to the high downstream velocity. Development of the low-flow facility allows for native habitat revegetation within the approximately 10-acre area, which would result in an increase in long-term biological values.

5.2.2.4 Cultural Resources

The Reduced Project Alternative would not cause substantial adverse change in the significance of a historical resource because no historical resources are located within the project site. Two archaeological resources are located on the project site, however, and impacts to these resources would be reduced to a less than significant level after incorporating mitigation measures. Additionally, the Reduced Project Alternative would not impact human remains through compliance with regulatory measures.

5.2.2.5 Energy

The Reduced Project Alternative would utilize electricity and petroleum-based fuel supplies and distribution systems. Construction activities for the Reduced Project Alternative would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the Reduced Project

Alternative would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the Reduced Project Alternative. Additionally, the Reduced Project Alternative would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. However, the Reduced Project Alternative could result in stormwater overtopping the culvert under Palos Verdes Drive South, which could result in the temporary closing of a key arterial, resulting in a significant detour by vehicular traffic and thus consuming more energy than the proposed project.

5.2.2.6 Geology and Soils

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in downstream erosion and increases in downstream velocity.

5.2.2.7 Greenhouse Gas Emissions

The Reduced Project Alternative would result in minimal operational emissions, which would be limited to emergency pumps on the project site, which would contribute a negligible amount of GHG emissions. Construction emissions would not exceed the SCAQMD thresholds of significance. However, the Reduced Project Alternative could result in stormwater overtopping the culvert under Palos Verdes Drive South, which could result in the temporary closing of a key arterial, resulting in a significant detour by vehicular traffic and thus producing more GHG emissions than the proposed project.

5.2.2.8 Hazards and Hazardous Materials

The Reduced Project Alternative would result in a less than significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials because the materials being used for the project are not classified as acutely hazardous. The Reduced Project Alternative would also comply with regulations related to the accidental release of hazardous materials into the environment. Additionally, the Reduced Project Alternative site was not identified in the site-specific environmental database report. However, the Reduced Project Alternative would result in the potential overtopping of the culvert, which would hinder traffic circulation and potentially impair the implementation of an emergency response plan.

5.2.2.9 Hydrology and Water Quality

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in downstream erosion and increases in downstream velocity. Erosion and increases in downstream velocity would potentially alter drainage patterns over time.

5.2.2.10 Land Use and Planning

The Reduced Project Alternative could result in the temporary physical division of the community if stormwater flows overtopped the culvert under Palos Verdes Drive South, resulting in the temporary closing of a key arterial.

5.2.2.11 Noise

The Reduced Project Alternative would not result in construction or operation activities that may generate substantial temporary increases in ambient noise levels in the project vicinity in excess of standards established in the local General Plan or Noise Ordinance that are greater than those from the proposed project. The Reduced Project Alternative would also generate the same amount of ground-borne vibration or noise.

5.2.2.12 Recreation

The Reduced Project Alternative has the potential to temporarily affect recreational facilities due to project construction, but with implementation of the same mitigation required by the proposed project, the Reduced Project Alternative would remain consistent with local regulations and policies pertaining to recreational facilities and would not result in a substantial increase in the use of existing recreational facilities such that substantial physical deterioration of any such facility would occur or be accelerated.

5.2.2.13 Transportation and Traffic

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in potential overtopping of the culvert, which would hinder traffic circulation and potentially hinder emergency access.

5.2.2.14 Tribal Cultural Resources

The Reduced Project Alternative would not impact any cultural resources that are listed or eligible for listing in the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP). Additionally, although two cultural resources are located on the project site, by utilizing the same mitigation that is used in the proposed project, the impacts to tribal cultural resources that may inadvertently be found during construction activities would be less than significant.

5.2.2.15 Utilities and Service Systems

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in downstream erosion, potential overtopping of the culvert, increases in downstream velocity, and disruption to utilities and service systems.

5.2.2.16 Wildfire

The Reduced Project Alternative would not implement the flow reduction area proposed by the project. By removing the flow reduction area from the proposed project, stormwater would not be retained to facilitate a reduced downstream flow, similar to existing conditions. Elimination of the flow reduction basin would result in potential overtopping of the culvert, which would hinder traffic circulation and potentially hinder emergency access.

Therefore, a Reduced Project Alternative is not possible.

5.2.3 Other Alternatives Considered

Other alternatives that were brought up during NOP distribution included reducing the number of fissures to be filled and changing the materials used for the filling, eliminating the drainage swales, and changing the hydrauger locations. The material that would be used to fill the fissures has been updated to no longer use fly ash and to instead use a more appropriate material (i.e., bentonite chips and/or soil). Additionally, the design team has conducted a fill survey and determined the appropriate number of fissures to make a meaningful impact on landslide remediation. The design engineers will be consulted prior to the access/infilling of cracks in sensitive areas to evaluate whether the requirement for infilling of these cracks can be deleted. Elimination of the drainage swales was raised as a consideration for reducing the project footprint. Eliminating the swales would lead to continued erosion, which would impact sensitive habitats and reduce the likelihood of an increase in the functions and values of existing water resources. As for changes to the hydrauger configuration, the locations of the hydrauvers moved several times relative to the original design, and one of the hydrauger batteries was eliminated. The rest of hydrauvers were shortened, so that they do not penetrate below private residences or extend beyond the City-owned land. These amendments to the hydrauger configuration represent the bare minimums needed to be able to slow down the landslide. For the reasons stated above, these other alternatives are not possible.

5.3 COMPARISON OF PROJECT ALTERNATIVES

The following discussion compares the impacts of each alternative with the impacts of the proposed project, as detailed in Chapter 4.0 of this EIR. Table 5.A compares the impacts of the alternatives with those of the proposed project and identifies whether the alternative results in: (1) a reduction of the impact; (2) a greater impact than the project; or (3) the same impact as the project. Table 5.A further summarizes the changes in significant impacts among the various alternatives.

Consequently, the Reduced Project Alternative would not meet the project objectives specified in Section 5.1.2. Table 5.B summarizes whether the various project alternatives would meet the project objectives.

Table 5.A: Comparison of Alternatives to the Proposed Project

Environmental Issue	Proposed Project	Alternative 1: No Project	Alternative 2: Reduced Project
Aesthetics	LTS	Same	Same
Air Quality	LTS	Greater	Same
Biological Resources	LTS/Mit	Greater	Greater
Cultural Resources	LTS/Mit	Greater	Same
Energy	LTS	Greater	Same
Geology and Soils	LTS/Mit	Greater	Greater
Greenhouse Gas Emissions	LTS	Greater	Same
Hazards and Hazardous Materials	LTS	Greater	Greater
Hydrology and Water Quality	LTS	Greater	Greater
Land Use and Planning	LTS	Greater	Same
Noise	LTS	Reduced	Same
Recreation	LTS/Mit	Greater	Same
Transportation and Traffic	LTS	Greater	Greater
Tribal Cultural Resources	LTS	Same	Same
Utilities and Service Systems	LTS	Greater	Greater
Wildfire	LTS	Greater	Greater

Impact Abbreviations

- LTS: Less than Significant Impact
- LTS/Mit: Less than Significant Impact with Mitigation
- SIG: Significant Impact with or without Mitigation

Table 5.B: Do the Alternatives Meet Project Objectives?

Project Objective	Proposed Project	Alternative 1: No Project	Alternative 2: Reduced Project
Identifying geotechnical engineering solutions that are environmentally sensitive, will substantially reduce the risk of damage to public and private property, and would allow for the significant improvement of roadway and infrastructure, safety, and stability projects	Consistent. The proposed project is intended to substantially minimize movement in the existing PBL area by implementing a series of recommended environmentally friendly geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimization of stormwater infiltration into the subsurface. Implementation of the proposed project would allow for the protection and improvements of roadways and infrastructure in the project area.	Inconsistent. This alternative would not consist of geotechnical engineering solutions and would leave the site as is in its current condition. The No Project Alternative does not meet this project objective because it does not provide any solutions to remediate the landslide.	Inconsistent. This alternative would substantially minimize movement in the existing PBL area by implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. However, because downstream flows are not restricted, this alternative would result in impacts to roadways and infrastructure due to higher velocities and the potential to overtop the capacity of the culvert under Palos Verdes Drive South.
Reducing substantial human health risk and improving public safety	Consistent. The proposed project would reduce health and safety concerns related to the integrity of the surrounding road system, sewer system, other infrastructure, and public and private property improvements.	Inconsistent. This alternative would not reduce risks to human health or improve public safety, and it would leave the site as is in its current condition resulting in an increased risk to public health and safety.	Inconsistent. This alternative would not reduce health and safety concerns related to the integrity of the surrounding road system, sewer system, other infrastructure, and public and private property improvements.
Reducing the likelihood of major landslide movement that would drastically impact and could sever sewer trunk lines along Palos Verdes Drive South and cause effluent discharge into the ocean, resulting in regional impacts	Consistent. As indicated above, the proposed project is intended to significantly minimize movement in the existing PBL area. By doing so, it would reduce soil erosion losses and reduce health and safety concerns related to the integrity of the surrounding road system, sewer system, and other infrastructure.	Inconsistent. This alternative would not reduce the likelihood of a major landslide. Rather, it would exacerbate the current dangerous conditions and leave the site as is in its current condition. No project would result in an imminent threat to the sewer trunk line and Palos Verdes Drive South.	Inconsistent. The absence of a detention basin would greatly impact the ability to manage the flow of excess stormwater runoff. Without this feature, the project area would not be able to retain large flows of water. These flows would in turn percolate into the ground and generate runoff that would not reduce the likelihood of landslide movement. In addition, this alternative could result in overtopping of the existing culvert, resulting in roadway flooding and infrastructure damage. This would potentially impact the sewer trunk lines

Table 5.B: Do the Alternatives Meet Project Objectives?

Project Objective	Proposed Project	Alternative 1: No Project	Alternative 2: Reduced Project
			along Palos Verdes Drive South and cause effluent discharge into the ocean.
Reducing the likelihood of major landslide movement that would damage and render a major arterial street inconsistent and/or unusable, potentially leading to major detours, additional vehicle emissions associated with additional miles traveled, major disruptions to traveling motorists, and loss of productivity throughout the city of Rancho Palos Verdes and its surrounding communities	Consistent. As indicated above, the proposed project is intended to significantly minimize movement in the existing PBL area. By doing so, it would reduce soil erosion losses and reduce health and safety concerns related to the integrity of the surrounding road system, sewer system, other infrastructure, and public and private property improvements.	Inconsistent. This alternative would not reduce the likelihood of a major landslide. Rather, it would exacerbate the current dangerous conditions and leave the site as is in its current condition resulting in an imminent threat to the sewer trunk line and Palos Verdes Drive South.	Inconsistent. As mentioned above, the absence of a detention basin would greatly impact the ability to manage the flow of excess stormwater runoff, resulting in increased flows downstream, which could overtop the existing culvert. This would not reduce the likelihood of major landslide movement, which in turn would render major streets, including Palos Verdes Drive South, unusable.
Reducing the likelihood of surface fractures that would damage and fragment sensitive species habitat, thereby enhancing native vegetation in the Preserve	Consistent. The proposed project would establish environmentally sensitive swales that would eliminate drainage course movement. The swales would reduce erosion and eliminate the fragmentation of sensitive species habitat due to changes in the location of drainages, which fluctuate due to landslide movement.	Inconsistent. The No Project Alternative would maintain the existing setting status quo, which results in shifting drainage courses that damage and fragment sensitive species habitat.	Inconsistent. Removal of the flow reduction basin would result in increased downstream velocities, which would impact habitat.
Alleviating artesian water pressure below the PBL area, which is believed be a major contributing factor to landslide movement, and controlling major surface water runoffs	Consistent. The proposed project would consist of a groundwater extraction system of pipes, or “hydraugers,” that would be installed to alleviate artesian water pressure below the PBL.	Inconsistent. This alternative would not alleviate or reduce artesian water pressure below the PBL area and would leave the site as is in its current condition resulting in an imminent threat to the sewer trunk line and Palos Verdes Drive South, among other things.	Consistent. This alternative would consist of groundwater extraction system of pipes, or “hydraugers,” that would be installed to alleviate artesian water pressure below the PBL.

Table 5.B: Do the Alternatives Meet Project Objectives?

Project Objective	Proposed Project	Alternative 1: No Project	Alternative 2: Reduced Project
Reducing discharge of substantial sediments and associated pollutants into the Pacific Ocean that contribute to negative impacts on the coastal and marine environments	Consistent. The proposed project consists of a flow reduction area that will release stormwater at a gradual rate, slowing the flow and allowing fine particles of soil to settle within the flow reduction area. This would result in sediment-free water exiting the flow reduction area and routing through an existing 60-inch pipe that runs under Palos Verdes Drive South before being conveyed into the Pacific Ocean.	Inconsistent. This alternative would not reduce discharge of sediments and pollutants into the Pacific Ocean. The project site would remain as is in its current condition.	Inconsistent. Without the gradual release of stormwater, flow would not be slowed enough to allow fine particles of soil to settle within the flow reduction area. This would result in sediments routing through an existing 60-inch pipe that runs under Palos Verdes Drive South and being conveyed into the Pacific Ocean, contributing to negative impacts on the coastal and marine environments.
Selecting remedy options that are consistent with the natural visual characteristics of the surrounding Preserve	Consistent. The proposed project would preserve natural vegetation and recreational facilities within the Preserve and would consist of remedy options like the network of environmentally sensitive swales that would retain the natural visual characteristics of the surrounding Preserve due to use of geo fabric that will allow plant growth and blend in with the surrounding setting.	Not Applicable. This alternative would not result in any remedy options.	Consistent. The proposed project would preserve natural vegetation and recreational facilities within the Preserve and would consist of remedy options like the network of environmentally sensitive swales that would remain consistent with the natural visual characteristics of the surrounding Preserve due to use of geo fabric that will allow plant growth and blend in with the surrounding setting.

PBL = Portuguese Bend Landslide
Preserve = Palos Verdes Nature Preserve

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

When an alternatives analysis is prepared consistent with *CEQA Guidelines* Section 15126.6 (e[2]), an Environmentally Superior Alternative must be identified in the EIR. As detailed in Table 5.A, the Environmentally Superior Alternative is the one that would result in the fewest or least significant impacts. While Alternative 1: No Project would maintain the existing setting status quo without any requirement for mitigation, it was determined that in its current condition, the project site, located on the PBL complex, would continue to move at various rates, displacing the land seaward and continuing to damage utilities and roadways, damage private property improvements, impact native vegetation, result in continued erosion, and not provide for an increase in functions and values for project area drainages, resulting in an imminent public health and safety threat. Alternative 2: Reduced Project would result in greater impacts to downstream biological resources, increase erosion, and result in greater impacts to infrastructure, including Palos Verdes Drive South. Therefore, the proposed project is the Environmentally Superior Alternative.

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6.0 OTHER CEQA CONSIDERATIONS

6.1 SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(c) of the *State CEQA Guidelines* requires that an Environmental Impact Report (EIR) describe any significant impacts that cannot be avoided. Specifically, Section 15126.2(c) states that an EIR shall:

“Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.”

The Executive Summary of this document contains a detailed summary that identifies the proposed project’s environmental impacts as compared to existing conditions, proposed mitigation measures, and the level of significance of any impacts after mitigation. The following is a summary of impacts that are considered significant, adverse, and unavoidable after all mitigation is applied. These impacts are also described in detail in Sections 4.1 through 4.16 of Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures. There are no significant unavoidable impacts associated with the project.

6.2 ENERGY IMPACTS

According to Section 15126.2(b) of the *State CEQA Guidelines*, “[i]f analysis of the project’s energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use.” Based on the analysis provided in Section 4.5, Energy, the project would not result in wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources.

6.3 GROWTH-INDUCING IMPACTS

Sections 15126.2(e) of the *State CEQA Guidelines* requires that an EIR analyze growth-inducing impacts and discuss the ways in which a proposed project could foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. This section examines ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly in the surrounding environment. *State CEQA Guidelines* Section 15126.2(d) also requires a discussion of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. To address these issues, potential growth-inducing effects were examined through analysis of the following questions:

- Would the project remove obstacles to, or otherwise foster, population growth (e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development)?

- Would the project foster economic growth?
- Would approval of the project involve some characteristic that may encourage and facilitate other activities that could significantly affect the environment?

Growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (*State CEQA Guidelines*, Section 15126.2(e)). This issue is presented to provide additional information on ways in which the proposed project could contribute to significant changes in the environment beyond the direct consequences of developing the proposed land uses as described in earlier sections of this Draft EIR. The project would not result in growth-inducing impacts because the project involves the remediation of an existing landslide, which addresses a public health and safety issue.

6.3.1 Remove Obstacles to, or Otherwise Foster, Population Growth

The area surrounding the project site is primarily undeveloped, with a mix of agricultural, open space-hazard, conservation, and single-family residential land uses. However, limited population growth is feasible within the vicinity of the project site, as only the surrounding residential land uses permit residential development. In addition, the surrounding topography includes moderate to steep slopes, which limits substantial population growth. In any event, the proposed project would not remove impediments to population growth in the area surrounding the project site. While the proposed project would require water line improvements on the project site, such improvements would be similar to existing conditions and intended primarily to meet temporary project-related demand, which would not necessitate substantial utility infrastructure improvements.

Construction of the proposed project would generate construction-related jobs. However, the proposed project would not promote construction workers relocating their places of residence as a direct consequence of working on the proposed project. The work requirements of most construction projects are highly specialized, so construction workers remain at a job site only for the limited time in which their specific skills are needed to complete a particular phase of the construction process. In addition, the supply of general construction labor in the region has been stable over recent years. In 2018, there were approximately 100,000 construction jobs in Los Angeles County. By 2028, construction jobs in the county are projected to increase to approximately 140,000 jobs (40 percent increase), suggesting a well-functioning construction job market and available regional labor pool (EDD 2022). Therefore, given the availability of construction workers, the proposed project would not induce material population growth from a short-term employment perspective. Furthermore, given that the employment opportunities generated by the construction of the proposed project would be filled by people who would commute to the project site, the potential population growth associated with project employees would be minimal.

The project is the remediation of seismic and hydrologic hazards at the existing Portuguese Bend Landslide (PBL) Complex and includes implementing a series of recommended geotechnical engineering solutions that will include relief of artesian pressure below the landslide basal surface and minimize stormwater infiltration into the subsurface. Implementation of the proposed project would not include the extension of roads or other infrastructure and would not change the operation of existing land uses. The proposed project would not generate any new permanent

residents on the project site or result in additional employment opportunities during operation. Therefore, the proposed project would not result in substantial indirect growth or create a significant demand for housing or services in the project vicinity.

6.3.2 Foster Economic Growth

The proposed project would generate construction-related jobs, which could foster regional economic growth. Additionally, the proposed project would change the number of employees working on site during operation to provide routine maintenance for the project's components. However, this increase would be marginal; therefore, project operation is unlikely to aid in substantial economic growth.

6.3.3 Other Characteristics

The project is the remediation of seismic and hydrologic hazards at the existing PBL Complex. It does not include construction of new homes or businesses and does not include extension of roads or other infrastructure. Therefore, the project would not directly increase the regional population beyond existing levels.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(d) of the *State CEQA Guidelines* requires that an EIR consider and discuss significant irreversible changes that would be caused by implementation of a proposed project. The *State CEQA Guidelines* specify that the use of nonrenewable resources during the initial and continued phases of a project should be discussed because a large commitment of such resources makes removal or non-use thereafter unlikely. Primary and secondary impacts (e.g., a highway improvement that provides access to a previously inaccessible area) should also be discussed because such changes generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with a project and should be discussed. Based on the analysis provided in this Draft EIR, there are no significant irreversible environmental changes associated with the project.

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7.0 MITIGATION AND MONITORING AND REPORTING PROGRAM

7.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or the conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.
- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.
- A public agency shall provide measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.
- Prior to the close of the public review period for a Draft Environmental Impact Report (EIR), a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

7.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City of Rancho Palos Verdes (City) to ensure that all mitigation measures adopted as part of the Portuguese Bend Landslide Remediation Project (proposed project) will be carried out as described in this Draft EIR.

Table 7.A lists each of the mitigation measures specified in this Draft EIR and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measures	
4.1: Aesthetics			
There are no potentially significant impacts related to aesthetics; therefore, no mitigation is required.			
4.2: Air Quality			
There are no potentially significant impacts related to air quality; therefore, no mitigation is required.			
4.3: Biological Resources			
BIO-1	Focused Plant Survey. Prior to construction, a focused plant survey should be conducted within the final project work areas for the following species: aphanisma, Brand’s star phacelia, Coulter’s saltbush, mesa horkelia, Parish’s brittlescale, Santa Catalina Island desert-thorn, and south coast saltscale. Surveys should be conducted in May/June to capture the appropriate blooming periods for these species. If an existing population will be impacted by covered projects/activities, the project applicant will engage the Palos Verdes Peninsula Land Conservancy (PVPLC), the City’s Palos Verdes Nature Preserve (Preserve) Habitat Manager, and work with the Wildlife Agencies to prepare and implement a habitat restoration plan in accordance with the habitat restoration plan guidelines in Section 7.5 of the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP), to be approved by the City and Wildlife Agencies, that will ensure no net loss of listed species within the population. If listed special-status plant species are found, the compensatory mitigation plan must also be approved by the United States Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Wildlife (CDFW), as applicable.	City of Rancho Palos Verdes and/or Project Contractor	Prior to construction, in May/June
BIO-2	Pre-construction Nesting Bird Surveys. If vegetation removal, construction, or grading activities are planned to occur within California gnatcatcher habitat during its breeding season (February 15–August 31), a pre-construction survey will be conducted to determine nesting activity. The Community Development Director, or designee, shall confirm that the City has retained a qualified biologist (USFWS and CDFW will be provided a 10-day period to approve the proposed biologist; if no response from USFWS and CDFW is received within 10 days, approval will be waived), who shall conduct a pre-construction nesting bird survey no more than 3 days prior to the start of such activities. Survey results will be submitted to the Wildlife Agencies for review and approval. If comments are not received in 10 days, the approval requirement will be waived. If nesting activity is detected, all construction activity must occur outside of a 300-foot buffer surrounding each nest. Reductions in the nest buffer may be possible depending on site-specific factors, in coordination with the Wildlife Agencies. The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.	City of Rancho Palos Verdes and/or Project Contractor	No more than 3 days prior to the start of vegetation removal, construction, or grading activities planned to occur from February 15 to August 31.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
BIO-3	<p>Worker Environmental Awareness Program (WEAP) Training. Prior to commencing construction, the City’s Community Development Director, or designee, shall confirm that a Worker Environmental Awareness Program training shall be conducted by the City-approved qualified biologist to include the following: (1) the potential presence of covered species and their habitats, (2) the requirements and boundaries of the project, (3) the importance of complying with avoidance and minimization measures, (4) environmentally responsible construction practices, (5) identification of sensitive resource areas in the field, and (6) problem reporting and resolution methods. Training construction crews on special-status species identification and applicable standards and regulations would help avoid impacts to special-status species that are known to occur in habitats adjacent to the Project Site by identifying those areas where special-status species have potential to be present and specifying procedures that would be implemented to avoid impacts to such species. This training is intended educate all construction personnel on the relevant federal, State, and local laws related to regional special-status species known to occur in adjacent habitat types, particularly habitat associated with the Preserve. The training session shall include training on identification of species that may be found on or adjacent to the Project Site, the status of those species, and any legal protection afforded to those species. Measures that are being implemented to protect those species shall also be explained. Personnel shall be advised to report any special-status species promptly to the construction manager.</p>	City’s Community Development Director, or designee	Prior to the groundbreaking
BIO-4	<p>Construction Site Housekeeping. Impacts to habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities shall be minimized by adhering to the following avoidance and minimization measures, in accordance with the City’s NCCP/HCP for the duration of construction activities:</p> <ul style="list-style-type: none"> • Construction staging areas will be located at least 15 meters (50 feet) away from the Preserve boundary and natural drainages. No-fueling zones will extend a minimum distance of 15 meters (50 feet) from all drainages and away from the Preserve boundary. • Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction. • Project-related vehicles shall observe a daytime speed limit of 10 miles per hour (mph) throughout the project site. Nighttime construction is not permitted unless the City Manager determining that nighttime work is necessary to address public health and safety concerns. Off-road traffic outside of designated project sites shall be prohibited. • To prevent inadvertent entrapment of animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of 	Project Contractor	During construction activities

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measures
	<p>earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.</p> <ul style="list-style-type: none"> • For the duration of construction activities, all food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least daily from the construction site. • Pets, such as dogs or cats, shall not be permitted on the Project Site during construction to prevent harassment, injury, or death of wildlife in the project vicinity. • Use of rodenticides and herbicides on project sites shall be restricted to prevent primary or secondary poisoning of predators and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the United States Environmental Protection Agency, the California Department of Food and Agriculture, and other State and federal legislation. 		
<p>BIO-5</p>	<p>Erosion Control and Amphibian Exclusionary Fencing. Grading and construction resulting in ground disturbance shall occur within the typical dry season (April 15–October 15), as feasible, to avoid erosion and sedimentation impacts to nearby creeks and water quality. Prior to commencing construction, the City’s Community Development Director, or designee, shall verify that project plans require the project contractor to install adequate erosion and sedimentation barriers (e.g., silt fencing, as described below) prior to ground disturbance to prevent any sediment-laden runoff or debris from entering adjacent waterways or the Pacific Ocean during the wet season or periods of rain. This silt fencing shall also serve as a temporary barrier to further minimize the potential for special-status amphibians and other wildlife to enter work areas during construction. The barriers shall consist of 3-foot-tall silt fencing buried to a depth of at least 6 inches below the soil surface along the outer limits of all work areas (or as otherwise required by the stormwater pollution and prevention plan (Stormwater Pollution Prevention Plan [SWPPP and BMPs) These barriers shall be inspected daily by construction personnel and maintained and repaired as necessary for the duration of construction to ensure they are functional and are not a hazard to wildlife on the outer side of the fence. A City approved qualified biologist shall monitor all fence installation. All barriers shall be removed following completion of construction.</p>	<p>City’s Community Development Director, or designee</p>	<p>Prior to commencing construction (ground disturbance)</p>

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
BIO-6	Defining Construction Staging Areas and Regulating Access to the Preserve. During construction, it is required that the construction footprint be clearly defined with flagging and/or fencing, which will be removed upon completion. Additionally, when accessing the Preserve, authorized vehicle operators shall take measures to avoid and minimize, to the maximum extent possible, environmental damage, including damage to habitat and covered species. Existing Preserve roads or trails that accommodate authorized vehicles in the Preserve should be used wherever practical while minimizing authorized vehicle trips overall within the Preserve. Any unavoidable access routes outside existing trails that can accommodate authorized vehicles or construction areas should be clearly marked. Any new recreational trails, trails that can accommodate authorized vehicles, and utility corridors will be located in areas that avoid/minimize impacts to covered species, habitat fragmentation, and edge effects. The width of construction corridors and easements shall be reviewed and approved by the City prior to use, and said footprint shall be minimized to the maximum extent possible.	Project Contractor	During construction
BIO-7	Coastal Sage Scrub (CSS) Restoration Program. In order to ensure the best effort to minimize any potential impacts to the CSS habitat present in the project area, the City shall retain a qualified biologist to develop a project-specific restoration program for CSS and Saltbush Scrub according to the guidelines provided in Section 7.5 of the NCCP/HCP. The restoration plan shall also address the native planting to occur within the swales and low-flow reduction area. Both project components will be lined with geofabric conducive to planting of native material. Prior to selecting appropriate planting material, the City will consult with the PVPLC regarding the native plant mix and source for obtaining native plants and seeds. Temporary impacts to native vegetation will be restored with native vegetation appropriate to the physical condition of the site within 60 days of the completion of construction	City of Rancho Palos Verdes	Within 60 days of the completion of construction
BIO-8	Pre-construction Palos Verdes Blue Butterfly Surveys. If vegetation removal, construction, or grading activities are planned to occur within the flight season of the Palos Verdes blue butterfly (PVB) (late January through early May), a pre-construction survey will be conducted to determine the presence of any PVB host plants in all suitable habitat within the proposed project impact areas. If host plants are identified, a 5-foot buffer around the host plants will be avoided if feasible. If avoidance of host plants is not feasible, focused PVB surveys will be conducted. If PVB is discovered during surveys, the PVPLC, in coordination with the Wildlife Agencies, will be provided the opportunity to relocate any and all larvae, pupae, or adults. Occupied PVB host plants will be avoided when possible. Occupied habitat will be defined as host plants, including a 5-foot buffer, within a 50-foot buffer around any PVB observation.	City of Rancho Palos Verdes and/or project contractor	Prior to commencing construction (ground disturbance)

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
BIO-9	Mitigation Measure MM-BIO-9, Retaining a Qualified Biologist. Prior to commencing construction, the City shall retain the services of a qualified biologist. The USFWS and CDFW will be provided a 10-day period to approve the proposed biologist. If no response from USFWS and CDFW is received within 10 days, approval will be waived. The Project Biologist shall monitor all project-related ground-disturbing construction activities and assist the City with implementation of all biological resource mitigation measures.	City of Rancho Palos Verdes	Prior to commencing construction (ground disturbance)
4.4: Cultural Resources			
MM CUL-1	Retaining a Qualified Archaeologist. Prior to commencing construction, the City of Rancho Palos Verdes (City) shall retain the services of a Qualified Archaeologist meeting the Secretary of the Interior’s Standards. During project-related ground-disturbing construction activities all initial ground-disturbing work shall be monitored by the City’s Archeologist (i.e., an Archaeological Resources Monitor) proficient in artifact and feature identification in monitoring contexts.	City of Rancho Palos Verdes	Prior to commencing construction and during project-related ground-disturbing construction activities
MM CUL-2	Worker Environmental Awareness Program (WEAP). Prior to commencing construction activities (and thus prior to any ground disturbance on the proposed project site), the City’s Qualified Archaeologist shall conduct initial Worker Environmental Awareness Program (WEAP) training of all construction personnel, including supervisors, present at the outset of the project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the Qualified Archaeologist to identify and minimize impacts to archaeological resources and maintain environmental compliance. This WEAP training will educate the monitor(s) of construction procedures to avoid construction-related injury or harm. This training may be performed periodically, such as for new personnel coming on to the project as needed.	City’s Qualified archaeologist and Project Contractor	Prior to commencing construction activities (ground disturbance)
MM CUL-3	Monitoring During Ground-Disturbing Activities. Prior to commencing construction, the Project Contractor shall provide the City’s Qualified Archaeologist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours’ notice will be provided to the consultant prior to commencement of any initial ground-disturbing activities, such as vegetation grubbing or clearing, grading, trenching, or mass excavation. The Qualified Archaeologist shall be present on site at the commencement of ground-disturbing activities related to the project. The Qualified Archaeologist shall observe initial ground-disturbing activities and, if determined appropriate, adjust the number of monitors as needed to provide adequate observation and oversight. The Qualified Archaeologist will have stop-work authority to allow for recordation and evaluation of	Project Contractor	48 hours prior to initial ground-disturbing activities

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
	finds during construction. The Qualified Archaeologist will maintain a daily record of observations to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the project. The City’s Qualified Archaeologist, Project Contractor, and subcontractors, and the City shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance in order to provide appropriate oversight.		
MM CUL-4	Discovery of Previously Unidentified Archaeological Materials. In the event of the discovery of previously unidentified archaeological materials, the Project Contractor shall immediately cease all work activities within an area of no less than 50 feet of the discovery. After cessation of excavation, the Project Contractor shall immediately contact the City. The discovery of any cultural resource within the project area shall not be grounds for a project-wide “stop-work” notice or otherwise interfere with the project’s continuation except as set forth in this paragraph. In the event of an unanticipated discovery of archaeological materials during construction, the City’s Qualified Archaeologist shall evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and cannot be avoided, the City shall implement an archaeological data recovery program.	Project Contractor	During construction and in the event of the discovery of previously unidentified archaeological materials
MM CUL-5	Archaeological Resources Monitoring Report. Within 60 days of the completion of all ground-disturbing activities, the City’s Archaeologist, serving as the City’s Archaeological Monitor, shall prepare an Archaeological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the South Central Coastal Information Center (SCCIC), as required.	City’s Qualified archaeologist	Within 60 days of the completion of all ground-disturbing activities
4.5: Energy			
There are no potentially significant impacts related to energy; therefore, no mitigation is required.			
4.6: Geology and Soils			
MM PAL-1	Paleontological Resources Monitor. The City of Rancho Palos Verdes (City) shall retain the services of a Qualified Paleontologist meeting the Secretary of the Interior’s Standards prior to commencing construction activity and require that all initial ground-disturbing work be monitored by paleontological specialists (Paleontological Resources Monitor) proficient in fossil identification in monitoring contexts.	City of Rancho Palos Verdes	Prior to commencing construction activity (ground disturbance)
MM PAL-2	Paleontological Mitigation Plan. Prior to commencing construction activity, the City’s qualified Paleontologist shall prepare a Paleontological Mitigation Plan (PMP) outlining procedures for paleontological data recovery for the proposed project and submitted to the City for review and approval. The development and implementation of the PMP shall include consultations with the applicant’s engineering geologist as well as a	City’s Qualified Paleontologist	Prior to commencing construction

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
	requirement that the curation of all specimens recovered under any scenario shall be conducted through an appropriate repository agreed upon by the City. All specimens become the property of the City unless it chooses otherwise. If the City accepts ownership, the curation location may be revised. The PMP shall include developing a multilevel ranking system, or Potential Fossil Yield Classification (PFYC), as a tool to demonstrate the potential yield of fossils within a given stratigraphic unit. The PMP shall outline the monitoring and salvage protocols to address paleontological resources encountered during ground-disturbing activities as well as the appropriate recording, collection, and processing protocols to appropriately address any resources discovered. The cost of data recovery is limited to the discovery of a reasonable sample of available material. The interpretation of reasonableness rests with the City.		activity (ground disturbance)
MM PAL-3	Final Paleontological Mitigation Report. At the completion of all ground-disturbing activities, the City's Qualified Paleontologist shall prepare a final paleontological mitigation report summarizing all monitoring efforts and observations, as performed in line with the PMP, and all paleontological resources encountered, if any. The Paleontologist consultant shall also provide follow-up reports of any specific discovery, if necessary.	City's Qualified Paleontologist	At the completion of all ground-disturbing activities
4.7: Greenhouse Gas Emissions			
There are no potentially significant impacts related to land use and greenhouse gas emissions; therefore, no mitigation is required.			
4.8: Hazards and Hazardous Materials			
There are no potentially significant impacts related to hazards and hazardous materials; therefore, no mitigation is required.			
4.9: Hydrology and Water Quality			
There are no potentially significant impacts related to hydrology and water quality; therefore, no mitigation is required.			
4.10: Land Use and Planning			
There are no potentially significant impacts related to land use and planning; therefore, no mitigation is required.			
4.11: Noise			
There are no potentially significant impacts related to noise; therefore, no mitigation is required.			
4.12: Recreation			
REC-1	Swale Design. Prior to finalizing the design of any of the project's components, the Project Engineer shall confirm that trails affected by construction activities are restored to their pre-construction condition is acceptable to the City's Director of Recreation and Parks. Rerouting /reconstruction of trails shall be reviewed and approved by the Project Engineer, and provided to the Palos Verdes Peninsula Land Conservancy (PVPLC) for their input.	The Project Engineer and the Project Contractor	Prior to finalizing the design of any of the project's components

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measures
REC-2	Trail Closure Notifications. Fifteen days prior to the anticipated closure of any designated trails within the Abalone Cove Park and Reserve or Portuguese Bend Reserve, the Project Engineer, and/or designee, shall notify the City’s Recreation and Parks Department in order to notify PVPLC and provide adequate notice to the public about any expected trail closures during project construction. The public will be notified of closures via the City’s and the PVPLC’s websites, the City’s listserv and social media platforms, and use of on-site signs at relevant entries to the Palos Verdes Nature Preserve and at closure locations.	The Project Engineer, and/or designee	15 days prior to the anticipated closure of any designated trails within the Abalone Cove Shoreline Park and Reserve or Portuguese Bend Reserve
REC-3	Trail Repair/Maintenance. If Preserve trails become damaged or require maintenance resulting from the project, the City will coordinate with the PVPLC, to repair trails in accordance with the City Council-adopted Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and the Preserve Public Use Master Plan (PUMP).	City of Rancho Palos Verdes	If Preserve trails become damaged or require maintenance resulting from the project
4.13: Transportation/Traffic			
There are no potentially significant impacts related to transportation and traffic; therefore, no mitigation is required.			
4.14: Tribal Cultural Resources			
MM TCR-1	Tribal Cultural Resources Monitoring. Prior to the commencement of construction, City of Rancho Palos Verdes (City) approved qualified archaeologist to monitor all ground-disturbing activities associated with the project, including, but not limited to, grading, excavating, clearing, leveling and backfilling. The evaluation shall be conducted by an archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983) and qualified to identify subsurface tribal cultural resources. The archaeologist shall observe all ground-disturbing activities on the project site at all times the ground-disturbing activities are taking place. If ground-disturbing activities are simultaneously occurring at multiple locations on the project site, an archaeologist shall be required to monitor each location where the ground-disturbing activities are occurring. Prior to the commencement of any ground-disturbing activities at the project site, the City, or its successor, shall notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground-disturbing activities are about to commence and invite the tribe(s) to observe the ground-disturbing activities if the tribes wish to monitor, at their own expense.	Project Contractor,	Prior to the commencement of construction (ground disturbance) and during construction

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measures
<p>In the event that any subsurface objects or artifacts that may be tribal cultural resources are encountered during the course of the ground-disturbing activities, all such activities shall temporarily cease within the area of discovery, the radius of which shall be determined by the qualified archeologist, until the potential tribal cultural resources are properly assessed and addressed pursuant to the process set forth below:</p> <ol style="list-style-type: none"> 1. Upon a discovery of a potential tribal cultural resource, an applicant, or its successor, shall immediately stop all ground-disturbing activities and contact the following: (1) all California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project; (2) and the City’s Community Development Department, Planning Division. 2. If the City determines, pursuant to Public Resources Code Section 21704 (a)(2), that the object or artifact appears to be a tribal cultural resource in its discretion and supported by substantial evidence, the City shall provide any affected tribe a reasonable period of time, not less than 14 days, to conduct a site visit and make recommendations to the applicant, or its successor, and the City regarding the monitoring of future ground-disturbing activities, as well as the treatment and disposition of any discovered tribal cultural resources. 3. The City, shall implement the tribe’s recommendations if a qualified archaeologist, retained by the City concludes that the tribe’s recommendations are reasonable and feasible. 4. In addition to any recommendations from the applicable tribe(s), the City-approved qualified archeologist shall develop a list of actions that shall be taken to avoid or minimize impacts to the identified tribal cultural resources substantially consistent with best practices identified by the Native American Heritage Commission (NAHC) and in compliance with any applicable federal, State, or local law, rule, or regulation. 5. If the City, does not accept a particular recommendation determined to be reasonable and feasible by the qualified archaeologist, the City, may request mediation by the City’s mediator. The mediator must have the requisite professional qualifications and experience to mediate such a dispute. The City shall make the determination as to whether the mediator is at least minimally qualified to mediate the dispute. After making a reasonable effort to mediate this particular dispute, the City may: (1) require that the recommendation be implemented as originally proposed by the archeologist; (2) require that the recommendation, as modified by the City, be implemented as it is at least equally effective to mitigate a potentially significant impact; (3) require a substitute recommendation to be implemented that is at least equally effective to mitigate a potentially significant impact to a tribal cultural resource; or (4) not require the recommendation to be implemented because it is not necessary to mitigate any significant impacts to tribal cultural resources. The City shall pay all costs and fees associated with the mediation. 		

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measures
<p>6. The City may recommence ground-disturbing activities outside of a specified radius of the discovery site so long as this radius has been reviewed by a qualified archaeologist and determined to be reasonable and appropriate.</p> <p>7. The City may recommence ground-disturbing activities inside of the specified radius of the discovery site only after it has complied with all the recommendations developed and approved pursuant to the process set forth in Items 2 through 5, above.</p> <p>8. Copies of any subsequent prehistoric archaeological study, tribal cultural resources study, or report detailing the nature of any significant tribal cultural resources, remedial actions taken, and disposition of any significant tribal cultural resources shall be submitted to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, and to the NAHC for inclusion in its Sacred Lands File.</p> <p>Notwithstanding Item 8, above, any information determined to be confidential in nature by the City Attorney’s Office, shall be excluded from submission to the SCCIC or the general public under the provisions of the California Public Records Act and the California Public Resources Code (PRC).</p>		
<p>4.15: Utilities and Service Systems</p>		
<p>There are no potentially significant impacts related to utilities and service systems; therefore, no mitigation is required.</p>		
<p>4.16: Wildfire</p>		
<p>There are no potentially significant impacts related to wildfire; therefore, no mitigation is required.</p>		

8.0 LIST OF PREPARERS AND PERSONS CONSULTED

8.1 CITY OF RANCHO PALOS VERDES

The following individuals from the City of Rancho Palos Verdes (City) were involved in the preparation of this Draft Environmental Impact Report (EIR):

- Ara Mihranian, City Manager, City Administration
- Ramzi Awwad, Director, Public Works Department
- Ron Dragoo, Principal Engineer, Public Works Department
- Octavio Silva, Deputy Director/Planning Manager, Community Development Department
- Steven Giang, Associate Planner, Community Development Department
- Katie Lozano, Senior Administrative Analyst, Recreation and Parks Department

8.2 EIR PREPARERS

The following individuals were involved in the preparation of this Draft EIR. The nature of their involvement is identified below.

8.2.1 LSA Associates, Inc.

The following individuals were involved in the preparation of this Draft EIR:

- Deborah Pracilio, Principal in Charge
- Steve Letterly, Senior Environmental Planner/Project Manager
- Dakota Gross, Senior Environmental Planner
- Jazmine Estores, Environmental Planner
- Tamar Gharibian, Assistant Environmental Planner
- Justin Roos, Associate/Graphics
- Jennette Bosseler, Associate/Technical Editor
- Stephanie Powers, Word Processor

8.3 TECHNICAL REPORT PREPARERS

The following individuals were involved in the preparation of the technical reports in support of this Draft EIR. The nature of their involvement is identified below.

8.3.1 Chambers Group

The following individuals were involved in the preparation of the *Draft Biological Technical Report for the Portuguese Bend Landslide Remediation Project, City of Rancho Palos Verdes, CA* (October 2022):

- Paul Morrissey, Director of Biology
- Austin Burke, Biologist

The following individuals were involved in the preparation of the *Draft Cultural Resources and Paleontological Survey Results for the Rancho Palos Verdes Portuguese Bend Landslide Mitigation Project, City of Rancho Palos Verdes, CA* (September 2022):

- Lucas Tutschulte, Cultural Resources Department Lead
- Richard Schultz, Cultural Resources Principal Investigator
- Sandra Pentney, Cultural Resources Principal Investigator
- Ken Hazlett, Cultural Resources Specialist

8.3.2 Haley & Aldrich, Inc.

The following individuals were involved in the preparation of the *Draft Geological, Geotechnical, and Hydrogeological Review, Portuguese Bend Landslide Remediation Project* (November 2022):

- Robert K. Scott, PG, CHg, Senior Associate Hydrogeologist
- Catherine Ellis, PE, GE, Senior Associate/Geotechnical Engineer

8.3.3 KPFF Consulting Engineers

The following individuals were involved in the preparation of the *Draft Hydrology & Water Resources Technical Report, Portuguese Bend Landslide Remediation Project, Rancho Palos Verdes, CA* (November 2022):

- Richard Davis, PE, Managing Principal
- Kristen Sharer, PE, Associate
- David McGraw, PE, Associate
- Janina Baiza, EIT, Project Manager

8.3.4 Linscott, Law & Greenspan, Engineers

The following individuals were involved in the preparation of the *Draft Transportation Assessment, Portuguese Bend Landslide Remediation Project, City of Rancho Palos Verdes, CA* (October 2022):

- Francesca S. Bravo, Senior Transportation Engineer
- Alfred C. Ying, PE, Senior Transportation Engineer
- Clare M. Look-Jaeger, PE, Principal

8.3.5 VisionScape Imagery

The following individuals were involved in the preparation of the *Draft View Simulations, Portuguese Bend Landslide Remediation Project, Rancho Palos Verdes, CA* (October 2022):

- Joe Font, Principal
- Eddie Font, Principal

8.3.6 Vista Environmental

The following individual was involved in the preparation of the *Draft Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis, Portuguese Bend Landslide Remediation Project, City of Rancho Palos Verdes, CA* (November 2022):

- Greg Tonkovich, AICP, Senior Analyst

The following individual was involved in the preparation of the *Draft Noise Impact Analysis, Portuguese Bend Landslide Remediation Project, City of Rancho Palos Verdes, CA* (November 2022):

- Greg Tonkovich, AICP, Senior Analyst

8.4 PERSONS CONSULTED

The following individuals were consulted during the preparation of this Draft EIR:

- Robert Dorame, Tribal Chair, Gabrielino-Tongva Indians of California
- Christina Conley, Cultural Resource Administrator, Gabrielino-Tongva Indians of California

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