DRAFT ENVIRONMENTAL IMPACT REPORT

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
DISTRICT 29 PRIORITY CAPITAL DEFICIENCIES IMPROVEMENTS

PREPARED FOR:

County of Los Angeles Department of Public Works
Waterworks Division
900 South Fremont Avenue
Alhambra, California 91803

PREPARED BY:

ICF
601 W. Fifth Street, Suite 900
Los Angeles, CA 90071
Contact: Donna McCormick
Phone: 949.929.3536

October 2020

ICF. 2020. Draft Environmental Impact Report. Los Angeles County Department of Public Works District 29 Priority Capital Deficiencies Improvements. October. (ICF 00489.16.) Los Angeles, CA. Prepared for the County of Los Angeles Department of Public Works, Alhambra, CA.

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Acronyms and Abbreviations

µg/m^3	micrograms per cubic meter
µPa	micropascals
AB	Assembly Bill
ac	acre
amsl	above mean sea level
APE	area of potential effect
AQMP	Air Quality Management Plan
ASBS	Areas of Special Biological Significance
AT	Air Toxics
Basin	South Coast Air Basin
BAT	best available technologies
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BP	before present
BSA	biological study area
BTU	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's of Office of Emergency Services
Cal OSHA	California Division of Occupational Safety and Health
California DOC	California Department of Conservation
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCA	California Coastal Act
CCA	community choice aggregators
CCAP	Community Climate Action Plan
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP-OT	Coastal Development Permit – Oak Tree
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Environmental Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey

CH_4	methane
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COHb	carboxyhemoglobin
CPUC	California Public Utilities commission
CRA	Coastal Resource Areas
CRHP	California Register of Historical Resources
CRPR	California Rare Plant Rank
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
diesel PM	diesel-fueled engines
District 29	Waterworks District No. 29
DO	Oxygen, Dissolved
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
du	dwelling unit
EFH	Essential Fish Habitat
EIR	Environmental Impact Reports
EMS	emergency medical services
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESHA	Environmentally Sensitive Habitat Area
ESP	energy service providers
EWMP	Enhanced Watershed Management Program
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Area
GHG	greenhouse gas
GWP	global warming potential
H_2S	Hydrogen Sulfide
HFCs	hydrofluorocarbons
Hz	hertz
ICU	Intersection Capacity Utilization
in/sec	inches per second
IOUs	investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change

JLCCCP	Joint Legislative Committee on Climate Change Policies
JMD	JMDiaz, Inc.
JSA	jurisdictional study area
kHz	kilohertz
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACoFD	Los Angeles County Fire Department
LADPW	Los Angeles Department of Power and Water
LASD	Los Angeles County Sheriff's Department
LCFS	Low-Carbon Fuel Standard
LCP	Local Coastal Program
L_{dn}	Day-night sound level
L_{eq}	Equivalent sound level
LHMP	Local Hazard Mitigation Plan
LIP	Local Implementation Plan
L_{max}	Maximum sound level
L_{min}	minimum sound level
LOS	level of service
LRA	Local Responsibility Area
LRTP	Long Range Transportation Plan
LSTs	localized significance thresholds
LUP	Land Use Plan
LUST	Leaking Underground Storage Tank
L_v	Vibratory velocity level
LVMWD	Las Virgenes Municipal Water District
L_{xx}	Percentile-exceeded sound level
Malibu LCP	Malibu Local Coastal Program Land Use Plan
MBAs	Methylene Blue Activated Substances
MBTA	Migratory Bird Treaty Act
MD	Negative Declaration
Metro	Los Angeles County Metropolitan Transportation Authority
mgd	million gallons per day
MLD	Most Likely Descendant
MM	Mitigation Measure
MMBTU	million British thermal units
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MS4s	Municipal Separate Storm Sewer System
MT	metric ton
$MTCO_2e$	metric tons of carbon dioxide equivalent
N^2	nitrogen
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Contingency Plan
NEPA	National Environmental Protection Act

NFIP	National Floodplain Insurance Program
NGO	nongovernmental organization
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
NO	Nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
O	oxygen
O_3	ozone
O_4S-$_2$	sulfate ion
OAL	Office of Administrative Law
OHP	Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
Pb	lead
P-C	Production-Consumption
PCBs	Polychlorinated Biphenyls
PCH	Pacific Coast Highway
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
ppb	parts per billion
ppm	parts per million
PPV	Peak particle velocity
PRC	Public Resources Code
Proposed project or District 29 improvements	Los Angeles County Waterworks District No. 29 Priority Capital Deficiencies Improvements Project
PVC	polyvinyl chloride
RCEM	Road Construction Emissions Model
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act of 1976
Regional Board	California Regional Water Quality Control Board, Los Angeles Region
RMD	Road Maintenance Division
rms	root-mean-square
ROG	reactive organic gases
ROW	right-of-way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEA	Significant Ecological Area
SEMS	Standardized Emergency Management System
SERA	Significant Environmental Resource Area
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMM	Santa Monica Mountains
SMMUSD	Santa Monica-Malibu Unified School District
SO_2	sulfur dioxide
SPL	sound pressure level
SRA	State Responsibility Area
SSC	Species of Special Concern
Station 22	Malibu/Lost Hills Sheriff's Station
study area	District 29 study area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminants
Tanner Act	Toxic Air Contaminant Identification and Control Act
TIEs	Toxicity Identification Evaluations
TMDLs	Total Maximum Daily Loads
TPZs	Timberland Production Zones
TWRF	Tapia Water Reclamation Facility
U.S.C	U.S. Code
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USGS	United States Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VA	Veterans Affairs
VdB	vibration decibels
VOC	volatile organic compounds
V_{ref}	reference velocity amplitude
WDRs	waste discharge requirements
WLAs	waste load allocations
WSMP	Water System Master Plan
WUI	wildland-urban interface
$X\text{-}SO_4^{2-}$	Sulfates

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Executive Summary

Introduction and Background

The Los Angeles County Department of Public Works (LACDPW), Waterworks District No. 29 (District 29) is proposing the Los Angeles County Waterworks District No. 29 Priority Capital Deficiencies Improvements Project (proposed project or District 29 improvements). The proposed project consists of several separate improvements to existing waterlines and water reservoirs (i.e., tanks) and the construction of one new waterline. The objectives of this proposed project are to provide a more reliable water system for existing District 29 customers and complete the water system improvements that District 29 has identified as the most critical for the next 6 years.

This Environmental Impact Report (EIR) is the California Environmental Quality Act (CEQA) compliance document for the proposed project. The EIR has been prepared in compliance with CEQA, Public Resources Code (PRC) Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq.

LACDPW filed the Notice of Preparation (NOP) for this EIR with the State Clearinghouse on November 9, 2017, to begin the 30-day public scoping period. Two scoping meetings were held: on November 14, 2017, at Topanga Elementary School, 22075 Topanga School Road, Topanga; and on November 16, 2017, at the Malibu City Hall Multipurpose Room, 23825 Stuart Ranch Road, Malibu. The NOP and scoping meetings information can be found in Appendix A.

Proposed Project Summary

The proposed project would include the following: the demolition of two 50,000-gallon water tanks and construction of one tank reservoir in the unincorporated area of Topanga and demolition of one 70,000-gallon water tank and construction of one 225,000-gallon tank reservoir in Malibu; replacement of approximately 34,300 feet of existing underground water pipeline, ranging from 1.5 inches to 30 inches, in the City of Malibu and the County of Los Angeles, with new pipeline(s), ranging from 8 inches to 18 inches, 19,000 feet of which are along Pacific Coast Highway (PCH); construction of approximately 6,300 feet of new underground 12-inch pipeline in the City of Malibu; and repairing several creek crossing locations by replacing and recoating segments of pipe and air release valves on PCH. The pipeline segments would be constructed underground in the existing City of Malibu, County of Los Angeles, and California Department of Transportation (Caltrans) roadways.

The improvements included in the proposed project are listed below, and discussed in more detail in Chapter 2, *Project Description.*

- **Carbon Canyon Road and Carbon Mesa Road Waterline Improvements**: the replacement of 7,239 feet of aging and severely deteriorating waterlines subject to leaks, ranging in size from 1.5 to 4 inches in diameter, with 601 feet of 8- inch-diameter steel pipe and 6,638 feet 12-inch-diameter steel pipe.
- **Coastline Drive 12-Inch Waterline Improvements**: the replacement of over 2,000 feet of leak-prone, aging, and severely deteriorated 12-inch waterline.

- **District 29 Creek Crossing Repairs**: repair of the region's water main at seven creek crossing locations on PCH that are severely deteriorated and subject to leaks.
- **Fernwood Tank Improvement**: replacement of two aging and severely deteriorated 50,000-gallon tanks with a single 200,000 gallon tank.
- **PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)**: replacement of approximately 9,500 linear feet of aged and deteriorated 6-inch diameter steel water line with an 8-inch diameter steel water line in PCH between Zumirez Drive to Escondido Beach Road.
- **PCH and Topanga Beach Drive Waterline Improvements**: replacement of over 8,000 feet of aging, severely deteriorating waterlines that are subject to leaks, replacing 4- and 6-inch-diameter waterline with an 8-inch-diameter steel waterline.
- **Emergency Source of Water Supply Connection (Las Virgenes Connection)**: construction of approximately 6,300 feet of 12-inch-diameter emergency use steel transmission waterline that would connect to the Las Virgenes Municipal Water District to provide a mutual water source capability for the region in case of emergencies if the 30-inch-diameter main line is interrupted.
- **Big Rock Bypass Improvements**: construction of a 1,500-foot bypass for the region's main line, consisting of three parallel pipelines in PCH, to preserve the integrity of the Malibu water supply and prevent water leaks in the loose soils below PCH at Big Rock.
- **Upper Encinal Tank Improvement**: replacement of an aging and severely deteriorated 70,000-gallon tank with a 225,000 gallon tank.

Alternatives Considered

In 2012, Los Angeles County Waterworks District 29 drafted a Water Systems Master Plan (WSMP), in which improvement projects were considered and grouped by phases. The draft WSMP, Phase 1, included 42 pipeline improvements and 16 reservoir improvements, as well as pumping stations and pressure-regulating stations.

Since then, District 29 identified improvements to correct the most critical system deficiencies. These deficiencies were prioritized based on operational imperatives, importance to the overall system, and capacity. These improvements, identified as the priority capital deficiencies improvements, are included in this EIR.

Other improvements from the Phase 1 projects listed in the draft WSMP were considered as alternatives for the alternatives analysis. Three alternatives were identified: Different Improvements Alternative; More Improvements Alternative; and Fewer Improvements Alternative.

None of these alternatives would meet the project objectives to provide a more reliable water system for existing District 29 customers and complete the most critical water system improvement projects that District 29 has identified for the next 6 years. Therefore, these alternatives were not carried forward for analysis of comparative environmental impacts.

CEQA Guidelines Section 15126.6(e)(1) requires the analysis of a "no project" alternative to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the project. Under the No Project Alternative, there would be no pipeline replacements, no

tank replacement, and no emergency source of water connection. This No Project Alternative was carried forward for analysis of comparative environmental impacts.

Issues to Be Resolved

Mitigation for the impacts on traffic from work within the PCH right-of-way calls for no construction during AM and PM peak hours (**Mitigation Measure [MM] TRA-3**). Implementation of this mitigation measure may require nighttime construction. However, the City of Malibu Noise Ordinance does not allow nighttime construction without written permission of the City Manager. Because it is unknown whether the City Manager will grant permission for nighttime construction, it may not be fully implemented, leading to potential significant and unavoidable impacts at serval locations along PCH.

Areas of Controversy

During the public scoping meetings in November 2017, some people wanted the project to be expanded to not only address the most critical water system improvements that District 29 has identified for the next 6 years, but also include additional improvements that would expand the District 29 water capacity and allow new water service and development. Opinions were also expressed that the District should not expand service because of the growth that could occur as a result. After the Woolsey Fire in November 2018, which consumed 151 square miles and 1,600 structures in Malibu and Los Angeles County, the availability of adequate fire-fighting capacity has also been a local concern.

Other concerns expressed at the scoping meetings impacts related to construction, especially for the Fernwood Tank Improvement, including access, fire risk, demolition, landslides, and noise.

Summary of Environmental Impacts of the Project

Based upon the analyses presented in Chapter 3 of this EIR, Table ES-1, Summary of Proposed Project Impacts and Mitigation Measures, summarizes the impacts of the proposed project and the mitigation measures identified to reduce potentially significant effects. Mitigation measures apply to all improvements unless otherwise noted.

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Table ES-1. Summary of Proposed Project Impacts and Mitigation Measures

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Aesthetics	**AES-I.a.**	*Would the project have a substantial adverse effect on a scenic vista?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Aesthetics	**AES-I.b.**	*Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Aesthetics	**AES-I.c.**	*Would the project 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 a 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?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Aesthetics	**AES-I.d.**	*Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Agricultural and Forestry Resources	**AG-II.a.**	*Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Agricultural and Forestry Resources	**AG-II.b.**	*Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Agricultural and Forestry Resources	**AG-II.c.**	*Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (Government Code Section 51104(g))?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Agricultural and Forestry Resources	**AG-II.d.**	*Would the project result in the loss of forestland or conversion of forestland to non-forest use?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Agricultural and Forestry Resources	**AG-II.e.**	*Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Air Quality	**AQ-III.a.**	*Would the project conflict with or obstruct implementation of the applicable air quality plan?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Air Quality	**AQ-III.b.**	*Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Air Quality	**AQ-III.c.**	*Would the project expose sensitive receptors to substantial pollutant concentrations?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Air Quality	**AQ-III.d.**	*Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Biological Resources	**BIO-IV.a.**	*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 CDFW or USFWS?*	**Construction**: Significant impacts to special-status species **Operation**: Significant impacts to special-status species	**MM BIO-1**: **Environmentally Sensitive Area Fencing** Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around areas adjacent to the improvement limit of disturbance to designate ESAs to be protected. No construction activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of cut or fill material in areas where vegetation is immediately adjacent to planned grading activities. **MM BIO-2**: **Pesticides** Herbicides and insecticides that are not approved as safe to use around water will not be used, nor will rodenticides. **MM BIO-3**: **Clean Construction Area** To avoid attracting predators of special-status species, the improvement sites will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site(s). **MM BIO-4**: **Preconstruction Nesting Bird Survey** If construction commences during the bird breeding season (March 1 through June 30), a preconstruction survey for nesting birds by an experienced avian biologist will occur within 3 days prior to construction activities. The survey will occur within all suitable nesting habitat within the improvement impact area and at a buffer deemed suitable by the biologist. It is assumed that areas along PCH will receive a smaller survey buffer than areas where there is less ambient disturbance. If nesting birds are found, an avoidance area will be established as	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				appropriate by a qualified biologist around the nest until it has determined that young have fledged or nesting activities have ceased. The improvement site will need to be resurveyed if there is a lapse in construction activities for more than 7 days during the nesting season. In areas where vegetation trimming is required during the construction phase, the avian biologist will conduct a preconstruction survey for nesting birds in the targeted vegetation within 3 days prior to trimming, and preferably on the same day. This action is required even if there has been no lapse in construction activities in an area so as to avoid direct take of active but "acclimated" nests that may be present. **MM BIO-5**: **Noise Control** So as to reduce unnecessary sound or disturbance to wildlife, vehicles or equipment that are not actively being used will not be left to idle unnecessarily. **MM BIO-6**: **Nighttime Construction** To the extent feasible, nighttime construction will not occur. When nighttime construction cannot be avoided, any required external light sources must be directed at the ground or directly at active construction and must have baffles or other mechanisms to reduce the amount of visible light that may disturb nearby nesting, foraging, or migrating wildlife. **MM BIO-7**: **Pets** No pets will be allowed in, or adjacent to, the improvement site. **MM BIO-8**: **Plant Surveys** Focused surveys for rare plant species will occur within suitable habitat during the most recent blooming season prior to the start of construction. Surveys for Lyon's pentachaeta, Santa Monica dudleya, Braunton's milk vetch, Agoura Hills dudleya, San Fernando Valley spineflower, Coulter's saltbush, Malibu baccharis, Brewer's calandrinia, Catalina mariposa-lily, Plummer's mariposa-lily, Lewis' evening primrose, western dichondra, mesa horkelia, decumbent goldenbush, southern California black walnut, fragrant pitcher sage, ocellated Humboldt lily, white-veined monardella, chaparral ragwort, and California screw moss will be conducted within areas of coastal scrub, chaparral, and woodland and non-native grassland habitat within the project's limits of disturbance. Surveys for Ventura marsh milk-vetch, salt marsh bird's-beak, coastal dunes milk-vetch, red sand verbena, Lewis' evening primrose, southwestern spiny rush, south coast branching phacelia, and woolly seablite will be conducted within areas of coastal dunes and coastal lagoons within limits of disturbance. Special-status plants found during focused surveys will be avoided to the extent feasible. Where avoidance is not possible, and as feasible depending upon the species and population, non-listed special-status plants will be relocated to the nearest suitable habitat by a qualified biologist prior to construction. State or federally listed species must be avoided unless a take permit is obtained from the appropriate discretionary regulatory agency. Habitat loss for plants with a CRPR of 1 or 2, or those that otherwise are locally rare and for which loss of individual plants or populations would be considered locally or regionally significant, will be mitigated at a minimum 1:1 ratio through mitigation bank or in-lieu fee program credit purchase or other approved method. **MM BIO-9**: **Invasive Weed Avoidance** Prior to site mobilization, all construction equipment and any vehicles that will be driven or parked off of pavement in areas containing invasive weeds will be thoroughly washed, to the extent possible, to remove invasive weed seeds from the tire tracks, undercarriages, and elsewhere that seeds may accumulate. In addition, any invasive plants that are removed from any of the project sites must be properly contained and disposed of so as to avoid their additional spread. **MM BIO-10**: **Dust Control** A water truck will be kept onsite and will be used as needed for dust containment. To the extent possible, the spread of fugitive dust will be avoided.	

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Biological Resources	**BIO-IV.b.**	*Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?*	**Construction**: Significant impacts related to dust deposition, tree trimming and removal **Operation**: Significant impacts related to sensitive communities from maintenance	**MM BIO-11**: **Certified Arborist** Prior to construction, a certified arborist will investigate and determine whether any trees that may be trimmed, removed, or otherwise affected on any site qualify as protected under the Malibu LCP, the SMM LCP, or the Los Angeles County Code of Ordinances. **MM BIO-12**: **Coastal Development Permit** The LACDPW requires compliance with the permit conditions stated within the Coastal Development Permit. The Los Angeles County Department of Public Works must seek a Coastal Development Permit under the Malibu LCP for the removal of or adverse impacts to any native oaks, southern California black walnut, California sycamore, white alder, or toyon, as protected under the Native Tree Protection Ordinance, that have at least one trunk measuring at least 6 inches in diameter, or a combination of any two trunks measuring a total of at least 8 inches in diameter, measured at 4.5 feet above natural grade. Under this ordinance, removed trees or trees left in a worse state than prior to construction must be replaced at a ratio of at least 10:1, either onsite or offsite, and the applicant must submit a native tree replacement planting program outlining planting locations and tree sizes, as well as details for monitoring success, including annual monitoring and reporting for at least 10 years. All planted trees must be less than 1 year old, and oaks must be grown from local acorns collected from the site vicinity. If the 10:1 replacement ratio cannot be met, an in-lieu fee commensurate to the type, size, and age of the affected tree(s) will be required instead. Additional requisite measures and postconstruction requirements would be included as permit conditions of approval and would include 1) protective fencing around root zones (no construction, grading, staging, or storage allowed); 2) any approved development inside the fenced areas can only use hand-held tools and must not damage root systems; 3) a qualified biologist or arborist must monitor protected trees in or adjacent to construction; and 4) if the protective fence is compromised, work must be suspended until the fence is repaired or replaced. The only exemptions to the permit requirement include native trees that have been destroyed or damaged beyond recovery by a natural disaster, native trees that are at risk of falling and cannot be stabilized and that pose an imminent public health and safety risk, and native trees that were planted for ornamental reasons and not as part of a LCP or Coastal Act requirement. The LACDPW will seek an Oak Tree Permit under the Los Angeles County Code of Ordinances before cutting, destroying, removing, relocating, damaging, or encroaching within the protected zone (defined as the dripline plus 5 feet, or 15 feet from the trunk, whichever is greater) of all oak trees in unincorporated Los Angeles County that are at least 8 inches in diameter or that have a combination of any two trunks measuring a total of at least 12 inches in diameter at 4.5 feet above natural grade, as well as any tree that has been planted as a replacement tree pursuant to this ordinance. The permit application must contain a detailed oak tree report evaluating structure, health, impacts, and mitigation for every potentially affected oak tree onsite. Under this ordinance, removed trees must be replaced at a ratio of at least 2:1, and all trees must be at least a 15-gallon specimen and measure at least 1 inch in diameter measured 1 foot above the base. Replacement trees must be maintained, monitored, and replaced for a minimum of 2 years after planting, and a plan must be put in place to protect the tree(s) once planted. Exemptions to the permit include construction of subdivisions approved prior to the effective date of the ordinance; oaks that are considered a public health or safety hazard; oaks that have been irretrievably damaged or destroyed by a natural disaster; maintenance necessary to protect or maintain electricity, communications, or other public utilities; tree maintenance limited to medium pruning of branches 2 inches in diameter or smaller; trees planted, grown, and/or held for sale by a licensed nursery; and trees in an existing road ROW for which pruning, removal, or relocation is necessary for safety reasons or road damage. The LACDPW will seek a CDP-OT before cutting, destroying, removing, relocating, damaging, or encroaching within the protected zone (defined as the dripline plus 5 feet, or 15 feet from the trunk, whichever is greater) all oak trees within the SMM LCP that are at least 6 inches in	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				diameter or that have a combination of any two trunks measuring a total of at least 8 inches in diameter at 4.5 feet above natural grade, or that are replacement trees planted under this ordinance. General application requirements are virtually identical to the Los Angeles County Oak Tree Ordinance. However, under the CDP-OT, mitigation for every affected oak tree must be as follows: the removal of oak trees must be replaced at a ratio of 10:1, an encroachment of more than 30 percent into the protected zone of an oak must be mitigated at a 10:1 ratio, encroachment that extends within 3 feet of the trunk must be mitigated at a 10:1 ratio, trimming branches over 11 inches in diameter must be mitigated at a 5:1 ratio, a 10–30-percent encroachment into the protected zone must be mitigated at a 5:1 ratio, and less than 10-percent encroachment into the protected zone requires only monitoring. Each replacement tree must be the same species as that it is intended to replace, it must be at least a 1-gallon size specimen, it must measure at least 1 inch in diameter 1 foot above the base, and it must have an acorn taken from the SMM planted within its watering zone. Replacement trees must be maintained, monitored, and replaced for a minimum of 7 years after planting. Where feasible, replacement trees must be grown from acorns collected in Los Angeles or Ventura Counties and must be planted in the same general area of the subject property as the tree they are replacing. If not feasible to plant onsite, trees must be planted in a protected area within the SMM and, where feasible, must be in the same watershed as the affected trees; if it is not possible to plant in the same watershed, an additional two trees will be added to the mitigation ratio for each affected tree. Trees with less than a 30-percent encroachment into the protected zone must be monitored and reported on annually for a minimum of 10 years, during which time if the subject trees die or deteriorate in health as a result of the project, they must be replaced at a 10:1 ratio under the same conditions as those described above. Finally, a plan must be submitted and implemented for the protection of all oak trees on the subject property, both during and after development. Exemptions to the permit include where there is an existing and unexpired CDP and oak tree permit approved prior to the effective date of the LCP; oaks that are considered a public health or safety hazard within 200 feet of an existing structure or on open land threatening public property or utilities; oaks that have been irretrievably damaged or destroyed by a natural disaster; maintenance necessary to protect or maintain electricity, communications, or other public utilities; tree maintenance limited to medium pruning of branches 2 inches in diameter or smaller; trees planted, grown, and/or held for sale by a licensed nursery; and trees in an existing road ROW for which pruning, removal, or relocation is necessary for safety reasons or for road damage.	
Biological Resources	**BIO-IV.c.**	*Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc) through direct removal, filling, hydrological interruption, or other means?*	**Construction**: Significant impacts to jurisdictional features during construction **Operation**: Significant impacts to jurisdictional features during maintenance	**MM BIO-13**: **Spoils and Rubble** Spoils and rubble will not be deposited outside the identified limits of construction and material waste generated by the project will be disposed of offsite. **MM BIO-14**: **Equipment Maintenance** All equipment will be adequately maintained to prevent the leaking of oil, fuel, or other hydraulic fluids into nearby creek crossings or into other areas where it could accidentally contaminate waterways. Heavy equipment will be examined for leaks each day before work begins and, in the case of a leak, their use will not be allowed until any leak-related issues are fixed. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur in designated staging areas. **MM BIO-15**: **Stormwater Pollution Prevention Plan** A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to affect water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include relevant BMPs to control pollutants, such as sediment control, catch basin inlet protection, construction materials management, and non-stormwater BMPs.	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				MM BIO-16: **Slope Protection.** The areas of disturbance and constructed slopes will be protected with temporary and/or permanent erosion controls, including fiber rolls, silt fencing, soil binders, rock slope protection, and/or revegetation with an erosion control seed mix. **MM BIO-17**: **Preconstruction Training.** When in or near natural habitat areas, all personnel involved in the onsite project construction will be required to participate in a preconstruction training program to understand the mitigation obligations on the project. **MM BIO-18**: **Jurisdictional Waters and Riparian Vegetation.** No equipment or vehicles must be operated or placed within the limits of jurisdictional waters or associated riparian vegetation. In areas where a foot crew is required to be present within jurisdictional waters for pipeline repairs, removals, or replacements, all tools, materials, and associated mechanical equipment must be packed out and removed on a daily basis when the crew leaves the site. No construction-related materials must be left within jurisdictional limits or associated riparian vegetation overnight.	
Biological Resources	**BIO-IV.d.**	*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?*	**Construction**: Significant impacts to wildlife movement and nursery sites during construction **Operation**: Significant impacts to nursery sites during maintenance	**MM BIO-1**: **Environmentally Sensitive Area Fencing** (above) **MM BIO-2**: **Pesticides** (above) **MM BIO-4**: **Preconstruction Nesting Bird Survey** (above) **MM BIO-5**: **Noise Control** (above) **MM BIO-6**: **Nighttime Construction** (above) **MM BIO-7**: **Pets** (above) **MM BIO-11**: **Certified Arborist** (above) **MM BIO-12**: **Coastal Development Permit** (above) **MM BIO-19**: **Wildlife Movement** Equipment maintenance, lighting, and staging will occur only in designated areas, and will not block or impede movement through wildlife corridors.	**Construction**: Less than significant **Operation**: Less than significant
Biological Resources	**BIO-IV.e.**	*Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*	**Construction**: Significant impact related to Malibu LCP's Native Tree Protection Ordinance, the SMM LCP, and the Los Angeles County Oak Tree Ordinance related to tree trimming and removal **Operation**: Significant impact related to Malibu LCP's Native Tree Protection Ordinance, the SMM LCP, and the Los Angeles County Oak Tree Ordinance related to tree trimming and removal during maintenance	**MM BIO-4**: **Preconstruction Nesting Bird Survey** (above) **MM BIO-11**: **Certified Arborist** (above) **MM BIO-12**: **Coastal Development Permit** (above)	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Biological Resources	**BIO-IV.f.**	*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?*	**Construction**: Potential significant impacts to designated ESHAs under Malibu LCP (if boundaries are correctly marked) **Operation**: Potential significant impacts to designated ESHAs under Malibu LCP (if boundaries are correctly marked and heavy machinery is needed for maintenance)	**MM BIO-9**: **Invasive Weed Avoidance** (above) **MM BIO-10**: **Dust Control** (above)	**Construction**: Less than significant **Operation**: Less than significant
Cultural Resources	**CUL-V.a.**	*Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 150645?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Cultural Resources	**CUL-V.b.**	*Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 150645?*	**Construction**: Significant impacts related to the potential to encounter archaeological resources (PCH and Topanga Beach Drive Waterlines Improvements, Segments 1, 2, and 3, and Big Rock Bypass Improvements) **Operation**: No impact	**MM CUL-1**: **Cultural Resources Monitoring Program.** *This mitigation measure is applicable to the following District 29 improvements only: PCH and Topanga Beach Drive Waterlines Improvements (Segments 1, 2, and 3) and Big Rock Bypass Improvements.* A Cultural Resources Monitoring Program must be developed once final designs are available and implemented during construction activities that have the potential to disturb native soils in archaeologically sensitive areas. The Cultural Resources Monitoring Program must include the following provisions: • A qualified archaeologist must implement a monitoring and recovery program. The archaeologist must meet the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards for Archaeology. • Native American tribes with an interest in the project area, as identified by the NAHC, must be contacted prior to the start of project construction. Qualified Native American monitors must be afforded an opportunity to be present during earthwork and excavations associated with the District 29 project. • The qualified archaeologist(s) must provide cultural resources awareness training for all construction personnel prior to the start of construction. Construction personnel must be briefed on procedures to be followed in the event that a unique archaeological resource, historic-era building or structure, or human remains are encountered during construction. A training log must be maintained. • The qualified archaeologist(s)/monitor(s) must be present during initial earthwork that has the potential to disturb native soils. Based on initial monitoring, the qualified archaeologist must determine the frequency and length of construction monitoring at each location. Monitoring at each specific project location would cease once excavation is completed. Monitoring of equipment installation, backfilling, or shallow excavations in areas of fill soils only will not be required. The monitor(s) must maintain a daily monitoring log that describes monitoring activities and results. **MM CUL-2**: **Discovery of Unknown Cultural Resources.** If cultural resources are discovered in the course of excavation for project construction, the Construction Contractor must halt work in the immediate area of the find until a qualified archaeologist can evaluate the significance and distribution of the materials and identify future activities needed. If the cultural material discovered is determined to be of potential	**Construction**: Less than significant **Operation**: No impact

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				archaeological significance, the investigation and future activities must be conducted in consultation with relevant Native American tribes as determined by the NAHC.	
Cultural Resources	**CUL-V.c.**	*Would the project disturb any human remains, including those interred outside of formal cemeteries?*	**Construction**: Significant if construction encountered human remains **Operation**: No impact	**MM CUL-3**: **Discovery of Human Remains** In accordance with California Health and Safety Code Section 7050.5 and PRC 5097.98, if human remains are found, the County Coroner must be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains must occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or are believed to be Native American, the Coroner must notify the NAHC in Sacramento within 24 hours. In accordance with PRC 5097.98, the NAHC must immediately notify those persons it believes to be the MLD of the deceased Native American(s). The MLD must complete their inspection within 48 hours of being granted access to the site and would then make recommendations as to the final disposition of the remains and associated grave goods.	**Construction**: Less than significant **Operation**: No impact
Energy	**EN-VI.a.**	*Would the project result in potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Energy	**EN-VI.b.**	*Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*	**Operation & Construction**: No impact.	No mitigation required	**Operation & Construction**: No impact
Geology, Soils, and Paleontological Resources	**GEO-VII.a.i.**	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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 a known fault? (Refer to Division of Mines and Geology Special Report 42)*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.a.ii.**	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.a.iii.**	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.a.iv.**	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Geology, Soils, and Paleontological Resources	**GEO-VII.b.**	*Would the project result in substantial soil erosion or the loss of topsoil?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.c.**	*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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.d.**	*Would the project result 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?*	**Construction**: Significant in areas with expansive soils (Emergency Source of Water Supply Connection [Las Virgenes Connection] and the Upper Encinal Tank Improvements only) **Operation**: Less than significant	**MM GEO-1**: **Site-Specific Expansive Soil Testing and Design.** *This mitigation measure is applicable only to the Emergency Source of Water Supply Connection (Las Virgenes Connection) and the Upper Encinal Tank Improvement.* During facility design for the Emergency Source of Water Supply Connection (Las Virgenes Connection) and the Upper Encinal Tank Improvement, an engineering geologist will conduct an evaluation of soils to determine if there are highly expansive soils at the site (i.e., with an expansion index greater than 20). If expansive soils are present, the engineering geologist must recommend remediation measures to address the soil condition or engineer the pipeline and tank to withstand the pressure of highly expansive soils.	**Construction**: Less than significant **Operation**: Less than significant
Geology, Soils, and Paleontological Resources	**GEO-VII.e.**	*Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Geology, Soils, and Paleontological Resources	**GEO-VII.f.**	*Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*	**Construction**: Significant for ground-disturbing improvements in sedimentary soils (all improvements except District 29 Creek Crossing Repairs and Big Rock Bypass Improvements) **Operation**: Less than significant	**MM GEO-2**: **Site-Specific Expansive Soil Testing and Design.** *This mitigation measure is applicable to the following seven improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, Fernwood Tank Improvement, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements (all three segments), Emergency Source of Water Supply Connection (Las Virgenes Connection), and Upper Encinal Tank Improvement.* Prior to construction of the improvements listed above, a qualified paleontologist(s) or cross-trained archaeologist(s) will assess the site with the construction contractor to identify the portions of the site, if any, that, based upon the potential to disturb sedimentary rock formations, will require paleontological monitoring. In these areas, paleontological monitoring will occur by a qualified paleontologist or cross-trained archaeologist. The monitor(s) will have the authority to stop work or divert heavy equipment away from the fossil site until they have had an opportunity to examine and salvage the remains. The monitor(s) will be required to immediately notify the County of the work stoppage or diversion. The monitor(s) must be equipped with tools and collection materials to rapidly remove fossil remains and/or matrix (i.e., earth), and thus reduce the potential for any construction delays. If necessary, the monitor(s) will be authorized to bring in further resources or equipment for large discoveries. **MM GEO-3**: **Paleontological Documentation and Recovery.** *This mitigation measure is applicable to the following seven improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, Fernwood Tank Improvement, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements (all three segments),*	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				Emergency Source of Water Supply Connection (Las Virgenes Connection), and Upper Encinal Tank Improvement, if any fossils are recovered during implementation of Mitigation Measures GEO-2. Fossils identified during construction must be documented by a qualified paleontologist(s) or cross-trained archaeologist(s) in a detailed Paleontological Mitigation Report. Fossils recovered from the field or by processing must be prepared, identified, and, along with accompanying field notes, maps and photographs, accessioned into the collections of a designated, accredited museum, such as the Natural History Museum of Los Angeles County.	
Greenhouse Gas Emission	**GHG-VIII.a.**	*Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Greenhouse Gas Emission	**GHG-VIII.b.**	*Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Hazards and Hazardous Materials	**HAZ-IX.a.**	*Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Hazards and Hazardous Materials	**HAZ-IX.b.**	*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?*	**Construction**: Potentially significant exposure of the public or the environment to hazardous materials resulting from ground-disturbing construction activities in the vicinity of the sites, including exposure to contaminated soil or groundwater (except for District 29 Creek Crossing Repairs, which would not require ground disturbance) **Operation**: Less than significant	**MM HAZ-1**: **Soil Screening and Soil Management Plan** *This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they would not involve ground disturbance.* As proposed improvements are to occur at several locations, there is a possibility of construction personnel encountering previously unknown or undocumented contamination while conducting earth-moving activities. Visual and olfactory observations are commonly used for screening purposes to identify potentially contaminated soils during construction. Uncontaminated native soils typically have distinct color and bedding, as well as other physical attributes (e.g., organic or peaty odors). Chemically impacted soils can exhibit a coloration that is distinctly different from surrounding uncontaminated soil. Often when construction equipment first encounters contaminated soils, a change in color is first noted, and, soon afterward, a distinct odor is detected. These odors can range from smells that are characteristic of oils or lubricants to sweeter smells, often associated with solvents. If suspected affected soils are encountered, construction should seek the professional recommendation of a consultant specializing in the identification of hazardous materials. Suspect soil should be isolated, covered, and bypassed by construction personnel until analytical results are reviewed by the qualified consultant. If contaminated soil is confirmed to exist by the qualified consultant, a licensed Professional Geologist, Professional Engineering Geologist, or Professional Engineer will be retained to prepare a Soil Management Plan. The Soil Management Plan will include the following: • Site characterization, including testing, to determine the full extent of potential areas of concern and all potential contaminants of concern. • Procedures for profiling and disposal of contaminated soil. The plan will describe the process for excavation, stockpiling, dewatering, treating, and/or loading and hauling of soil from the site, if necessary.	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				• Site worker safety procedures to ensure compliance with 29 CFR Part 120, Hazardous Waste Operations and Emergency Response regulations for site workers at uncontrolled hazardous waste sites. • The Los Angeles County Fire Department, the local CUPA, will be notified of the discovery. The impacted soil will be handled and disposed of in accordance with the requirements of the CUPA. The County and their contractors will implement all requirements of the Soil Management Plan. **MM HAZ-2**: **Contaminated Groundwater Management** *This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.* If contaminated groundwater is encountered during construction, a licensed Professional Geologist, Professional Engineering Geologist, or Professional Engineer will be retained to prepare a Groundwater Management Plan. The Groundwater Management Plan will include the following: • Site characterization documenting the extent and the type of the contamination present. • Procedures for profiling and disposal of contaminated groundwater. The plan will describe the process for dewatering, treating, and/or disposing of groundwater from the site, if necessary. • Site worker safety procedures to ensure compliance with 29 CFR Part 120, Hazardous Waste Operations and Emergency Response, regulations for site workers at uncontrolled hazardous waste sites. • The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), and/or the CUPA will be notified of the discovery. Any impacted dewatering fluid will be treated and disposed of in accordance with the requirements of the Regional Board and/or the CUPA. The County and their contractors will implement all requirements of the Soil Management Plan. **MM HAZ-3**: **Trench Slurry.** *This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.* If contaminated groundwater is encountered during construction, replacement improvements, or new pipeline construction, a preferential migration pathway for groundwater may be reduced or eliminated by backfilling the pipeline trench with a slurry that would be sufficient to seal off the trench from the impacted groundwater. A plan for such an installation will be prepared and submitted to the Regional Board and/or the CUPA for review and approval as required. **MM HAZ-4**: **Contaminated Soil Disposal.** *This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.* Contaminated soil encountered during construction activities would be removed and tested for level of contamination. If the soil is not considered to be hazardous, it may be disposed of at a Class III landfill. If the soil is deemed hazardous, it would be transported in accordance with hazardous waste regulations to a Class I landfill (Buttonwillow or Westmorland, both of which have adequate daily and total capacity) for final disposal.	

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Hydrology and Water Quality	**HWQ-X.a.**	*Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Hydrology and Water Quality	**HWQ-X.b.**	*Would the project substantially decrease groundwater supplies or substantially interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Hydrology and Water Quality	**HWQ-X.c.i.**	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Hydrology and Water Quality	**HWQ-X.c.ii.**	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Hydrology and Water Quality	**HWQ-X.c.iii.**	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Hydrology and Water Quality	**HWQ-X.d.**	*In flood hazard, tsunami, or seiche zones, would the project risk the release of due to project inundation?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Hydrology and Water Quality	**HWQ-X.e.**	*Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*	**Operation & Construction**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Land Use	**LU-XI.a.**	*Would the project physically divide an established community?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Land Use	**LU-XI.b.**	*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?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Mineral Resources	**MIN-XII.a.**	*Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Mineral Resources	**MIN-XII.b.**	*Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*	**Operation & Construction**: No impact	No mitigation required	**Operation & Construction**: No impact
Noise	**NOI-XIII.a.**	*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?*	**Construction**: Significant and unavoidable **Operation**: Less than significant	**MM NOI-1: Construction Noise Reduction.** The construction contractor will use appropriate noise-control measures to reduce short-term noise levels associated with project construction to the extent feasible. Noise controls could include any of the following, as appropriate: • Construction hours will be in compliance with City of Malibu and County of Los Angeles noise ordinances during construction within each respective jurisdictional boundary, to the extent feasible. Where construction is required outside of permissible hours or days of the week, written permission from the City Manager in accordance with Section 8.24.060(D) of the City Noise Ordinance or a variance from the County Health Officer in accordance with Section 12.08.580 of the County Noise Ordinance will be obtained. • For construction of the Coastline Drive 12-Inch Waterline Improvements, which is restricted to off-peak hours (see 3.17, Transportation), construction will only occur during the daytime, off-peak hours. • Best available noise-control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) will be used for all equipment and trucks to minimize construction noise impacts. • If impact equipment (e.g., jackhammers and pavement breakers) is used during project construction, hydraulically or electrically powered equipment will be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where the use of pneumatically powered tools is unavoidable, an exhaust muffler, which can lower noise levels from the exhaust by up to approximately 10 dBA, will be used on the compressed-air exhaust. External jackets on the tools themselves will be used, where feasible, which could reduce noise by 5 dBA. Quieter procedures, such as drilling rather than using impact equipment, will be used whenever feasible. • Stationary noise sources (e.g., generators, compressors, etc.) will be located as far from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures, where feasible and appropriate) will be used to ensure that local noise ordinance limits are met to the extent feasible. Enclosure openings or venting will face away	**Construction**: Significant and unavoidable **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				from sensitive receptors. The use of any stationary equipment will comply with the daytime and nighttime noise limits specified in pertinent noise ordinances to the extent feasible. • Equipment staging and parking areas will be located as far as feasible from residential and school receptors. • Haul trucks will not be allowed to idle for periods greater than 5 minutes, except as needed to perform a specified function (e.g., concrete mixing). • Back-up beepers for all construction equipment and vehicles will be broadband sound alarms or adjusted to the lowest noise levels possible, provided that OSHA and Cal OSHA's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures, such as escorts and spotters, will be employed. • A designated project liaison will be responsible for responding to noise complaints during the construction activities. The name and phone number of the liaison will be posted conspicuously at construction areas and on all advance notifications. This person will take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring will be presented at regular meetings with the construction contractor, and the liaison will coordinate with the construction contractor to modify, to the extent feasible, any construction activities that generate excessive noise levels.	
Noise	**NOI-XIII.b.**	*Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*	**Construction**: Significant vibration impacts from large mobile equipment used within 5 feet of adjacent residences for Fernwood Tank Improvement only **Operation**: No impact	**MM NOI-2: Construction Vibration Reduction.** Construction activities associated with the proposed project will avoid the operation of large-sized mobile equipment within 10 feet of neighboring residential structures. Instead, smaller-sized mobile equipment will be used within this distance.	**Construction**: Less than significant **Operation**: No impact
Noise	**NOI-XIII.c.**	*For a project located in the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 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?*	**Construction & Operation**: Less than significant	No mitigation required	**Operation & Construction**: Less than significant
Population and Housing	**POP-XIV.a.**	*Would the project induce substantial unplanned population growth in an area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Population and Housing	**POP-XIV.a.**	*Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Public Services	**PS-XV.a.i.**	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
		order to maintain acceptable service ratios, response times or other performance objectives for fire protection?			
Public Services	**PS-XV.a.ii.**	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Public Services	**PS-XV.a.iii.**	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Public Services	**PS-XV.a.iv.**	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Public Services	**PS-XV.a.v.**	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Recreation	**REC-XVI.a.**	*Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?*	**Construction**: Less than significant **Operation**: Less than significant	No mitigation required	**Construction**: Less than significant **Operation**: Less than significant
Recreation	**REC-XVI.b.**	*Would the project include recreational facilities or require the construction or expansion of recreational facilities that*	**Construction**: Less than significant	No mitigation required	**Construction**: Less than significant

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
		might have an adverse physical effect on the environment?	**Operation**: No impact		**Operation**: No impact
Transportation	**TRA-XVII.a.**	*Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities?*	**Construction**: Significant impacts to transit and roadways if City of Malibu does not allow nighttime construction Significant impact to bicycle routes and pedestrian facilities **Operation**: No impact	**MM TRA-1**: **All Lanes Open during Non-construction Periods** *This measure is applicable to the following improvements: all improvements except Fernwood Tank Improvement.* To reduce construction-related impacts related to roadway operations, all travel lanes will be opened during non-construction periods, with lanes maintained in a safe condition. **MM TRA-2**: **Construction Traffic Controls for Two-lane Roads** *This measure is applicable to the following improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, and Emergency Source of Water Supply Connection (Las Virgenes Connection).* To reduce construction-related impacts related to roadway operations on two-lane roadways due to closure of one of the lanes necessary to remove and replace existing pipelines, traffic controls will be used during construction. These will include, at a minimum: • Establishment of one-way traffic zones with adequate queuing areas for waiting traffic. • Use of appropriate advance warning signs such as ROAD WORK AHEAD, LANE CLOSED AHEAD, ONE-WAY TRAFFIC AHEAD, FLAGGERS AHEAD, PREPARE TO STOP, or similar warnings at sufficient distance to slow traffic before queuing location. • Flaggers positioned at either end of the one-way traffic zones at points of maximum visibility to stop traffic at a sufficient distance to prevent entrance into the work zone and to yield to opposing traffic. • Channeling devices, such as cones or other traffic barriers. • High-visibility safety apparel for flaggers in either fluorescent orange-red or fluorescent yellow-green, with reflective material, visible at a minimum distance of 1,000 feet. • Hand-signaling devises, such as STOP/SLOW paddles, lights, and red flags. • Illumination of flagger stations for nighttime work. • Communication devices for flaggers at either end of the one-way traffic zones. **MM TRA-3**: **Limit Construction to Off-Peak Hours.** *This measure is applicable to the following improvements:* • *Coastline Drive 12-inch Waterline Improvements* • *District 29 Creek Crossing Repairs* • *PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)* • *PCH and Topanga Beach Drive Waterline Improvements* • *Big Rock Bypass Improvements* In order to reduce peak-hour LOS impacts at affected locations, lane closures will occur only during off-peak hours, from 10 a.m. to 3 p.m. or from 9 p.m. to 5 a.m., with lanes restored to a safe condition during peak hours. **MM TRA-4**: **Traffic Controls for Full Roadway Closure.** *This measure is applicable to the Fernwood Tank Improvements.* To reduce construction-related impacts related to roadway operations on Horseshoe Drive with full roadway closure during construction when large trucks and other equipment are accessing	**Construction**: Less than significant **Operation**: No impact

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				the Fernwood Tank Improvements site, the following measures are required, at a minimum, before and during construction: • Notification of neighbors to the site at least 48 hours in advance if street closure will affect their access or on-street parking. Notification will be hand delivered to the affected house and will include a contact person with email and phone number. • Use of appropriate street closure signs positioned so that vehicles can make appropriate detours or U-turns. • Appropriate high-visibility barriers to prevent vehicles from entering closed areas. **MM TRA-5**: **Accommodate Bike Route on PCH during Construction.** *This measure is applicable to the following improvements:* • *District 29 Creek Crossing Repairs* • *PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)* • *PCH and Topanga Beach Drive Waterline Improvements* • *Big Rock Bypass Improvements* To reduce impacts on the Class III bike route on PCH from closure of outside lanes, bicycle route detours will be provided whenever possible, preferably separated from traffic, with appropriate signage. When not possible, signs indicating that the bike route will be closed will be posted at least 1 week prior to closure. **MM TRA-6**: **Accommodate Pedestrians during Construction within Roadway Rights-of-Way.** *This measure is applicable to the following improvements: all improvements except Fernwood Tank Improvement.* To reduce impacts on pedestrians from closure of outside lanes, safe pedestrian detours will be provided if sidewalks are blocked or unsafe during construction or if roadway rights-of-way without sidewalks are used for walking, jogging, or running.	
Transportation	**TRA-XVII.b.**	*Would the project conflict or be inconsistent with CEQA Guidelines Section 150643, subsection (b)?*	**Construction & Operation**: No impact.	No mitigation required	**Construction & Operation**: No impact
Transportation	**TRA-XVII.c.**	*Would the project substantially increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Transportation	**TRA-XVII.d.**	*Would the project result in inadequate emergency access?*	**Construction**: Significant impacts to emergency access if City of Malibu does not allow nighttime construction. **Operation**: No impact	**MM TRA-1**: **All Lanes Open during Non-construction Periods** (above) **MM TRA-2**: **Construction Traffic Controls for Two-lane Roads** (above) **MM TRA-3**: **Limit Construction to Off-Peak Hours** (above) **MM TRA-4**: **Traffic Controls for Full Roadway Closure** (above)	**Construction**: Less than significant **Operation**: No impact
Tribal Cultural Resources	**TCR-XVIII.a.**	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is*	**Construction**: Significant impacts related to potential significant/tribal cultural resources during groundbreaking activities	**MM CUL-1**: **Cultural Resources Monitoring Program** (above in Cultural Resources) **MM CUL-2**: **Discovery of Unknown Cultural Resources** (above in Cultural Resources)	**Construction**: Less than significant **Operation**:

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
		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 or in a local register of historical resources as defined in PRC Section 50201(k)?	**Operation**: No impact		No impact
Tribal Cultural Resources	**TCR-XVIII.b.**	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 PRC 50241? In applying the criteria set forth in subdivision (c) of PRC 50241 1, the lead agency shall consider the significance of the resource to a California Native American tribe?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Utilities and Utility Systems	**UT-XIX.a.**	*Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*	**Construction**: Significant environmental impacts related to the pipeline and tank construction **Operation**: No impact	**MM BIO-1**: **Environmentally Sensitive Area Fencing** (above in Biological Resources) **MM BIO-2**: **Pesticides** (above in Biological Resources) **MM BIO-3**: **Clean Construction Area** (above in Biological Resources) **MM BIO-4**: **Preconstruction Nesting Bird Survey** (above in Biological Resources) **MM BIO-5**: **Noise Control** (above in Biological Resources) **MM BIO-6**: **Nighttime Construction** (above in Biological Resources) **MM BIO-7**: **Pets** (above in Biological Resources) **MM BIO-8**: **Plant Surveys** (above in Biological Resources) **MM BIO-9**: **Invasive Weed Avoidance** (above in Biological Resources) **MM BIO-10**: **Dust Control** (above in Biological Resources) **MM BIO-11**: **Certified Arborist** (above in Biological Resources) **MM BIO-12**: **Coastal Development Permit** (above in Biological Resources) **MM BIO-13**: **Spoils and Rubble** (above in Biological Resources) **MM BIO-14**: **Equipment Maintenance** (above in Biological Resources) **MM BIO-15**: **Stormwater Pollution Prevention Plan** (above in Biological Resources) **MM BIO-16**: **Slope Protection** (above in Biological Resources) **MM BIO-17**: **Preconstruction Training** (above in Biological Resources) **MM BIO-18**: **Jurisdictional Waters and Riparian Vegetation** (above in Biological Resources) **MM BIO-19**: **Wildlife Movement** (above in Biological Resources) **MM CUL-1**: **Cultural Resources Monitoring Program** (above in Cultural Resources) **MM CUL-2**: **Discovery of Unknown Cultural Resources** (above in Cultural Resources) **MM CUL-3**: **Discovery of Human Remains** (above in Cultural Resources)	**Construction**: Significant and unavoidable environmental impacts related to noise impacts during nighttime construction **Operation**: No impact

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
				MM GEO-1: **Site-Specific Expansive Soil Testing and Design** (above in Geology, Soils, and Paleontological Resources) **MM GEO-2**: **Site-Specific Expansive Soil Testing and Design** (above in Geology, Soils, and Paleontological Resources) **MM GEO-3**: **Paleontological Documentation and Recovery** (above in Geology, Soils, and Paleontological Resources) **MM HAZ-1**: **Soil Screening and Soil Management Plan** (above in Hazards and Hazardous Materials) **MM HAZ-2**: **Contaminated Groundwater Management** (above in Hazards and Hazardous Materials) **MM HAZ-3**: **Trench Slurry** (above in Hazards and Hazardous Materials) **MM HAZ-4**: **Contaminated Soil Disposal** (above in Hazards and Hazardous Materials) **MM NOI-1**: **Construction Noise Reduction** (above in Noise) **MM NOI-2**: **Construction Vibration Reduction** (above in Noise) **MM TRA-1**: **All Lanes Open during Non-construction Periods** (above in Transportation) **MM TRA-2**: **Construction Traffic Controls for Two-lane Roads** (above in Transportation) **MM TRA-3**: **Limit Construction to Off-Peak Hours** (above in Transportation) **MM TRA-4**: **Traffic Controls for Full Roadway Closure** (above in Transportation) **MM TRA-5**: **Accommodate Bike Route on PCH during Construction** (above in Transportation) **MM TRA-6**: **Accommodate Pedestrians during Construction within Roadway Rights-of-Way** (above in Transportation)	
Utilities and Utility Systems	**UT-XIX.b.**	*Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Utilities and Utility Systems	**UT-XIX.c.**	*Would the project result in a determination by the wastewater treatment provider that 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?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Utilities and Utility Systems	**UT-XIX.d.**	*Would the project 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?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Utilities and Utility Systems	**UT-XIX.d.**	*Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact

CEQA Topic		Impact	Significance before Mitigation	Mitigation Measures (MM)	Significance after Mitigation
Wildfire	**WF-XX.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?*	**Construction**: Significant impacts to roadways, including emergency response and emergency evacuation routes, if City of Malibu does not allow nighttime construction **Operation**: Less than significant	**MM TRA-1**: **All Lanes Open during Non-construction Periods** (above) **MM TRA-2**: **Construction Traffic Controls for Two-lane Roads** (above) **MM TRA-3**: **Limit Construction to Off-Peak Hours** (above)	**Construction**: Less than significant **Operation**: Less than significant
Wildfire	**WF-XX.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 uncontrolled spread of a wildfire?*	**Construction & Operation**: No impact	No mitigation required	**Construction & Operation**: No impact
Wildfire	**WF-XX.c.**	*If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing environmental impacts on the environment?*	**Construction**: Less than significant **Operation**: No impact	No mitigation required	**Construction**: Less than significant **Operation**: No impact
Wildfire	**WF-XX.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 a result of runoff, post-fire slope instability, or drainage changes?*	**Construction & Operation**: Less than significant	No mitigation required	**Construction & Operation**: Less than significant

Chapter 1
Introduction

1.1 Background

The Los Angeles County Department of Public Works (LACDPW), is proposing the Los Angeles County Waterworks District No. 29 Priority Capital Deficiencies Improvements Project (proposed project or District 29 improvements). The proposed project consists of several separate improvements to existing waterlines and water reservoirs (i.e., tanks) and the construction of one new waterline. The objectives of this proposed project are to provide a more reliable water system for existing District 29 customers and complete the water-system improvements that District 29 has identified as the most critical for the next 6 years.

District 29 supplies water to approximately 20,000 people in the City of Malibu and unincorporated area of Topanga in Los Angeles County. Established in 1959, District 29 acquired water-system facilities from various small mutual water companies. This infrastructure is aging, with some of the acquired facilities originally constructed in the 1940s and 1950s. District 29 is supplied by a 30-inch-diameter transmission pipeline that was built during the 1960s. Major water system infrastructure facilities in District 29 include approximately 249 miles of water main and 47 tanks, with a total storage capacity of 20 million gallons.

The proposed project would include the following:

- Demolishing two water tanks in the unincorporated area of Topanga and constructing one tank reservoir to replace them;
- Demolishing one water tank in Malibu and construction a new, larger reservoir to replace it;
- Replacing approximately 34,300 feet of underground water pipeline in the City of Malibu and surrounding unincorporated Los Angeles County, 19,000 feet of which are along Pacific Coast Highway (PCH);
- Constructing approximately 6,300 feet of new underground pipeline in the City of Malibu; and
- Repairing several creek-crossing locations by replacing and recoating segments of pipe and air-release valves on PCH. All pipeline segments would be constructed underground in existing roadways.

1.2 About This EIR

This Draft Environmental Impact Report (EIR) complies with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] § 21000 et seq., and State CEQA Guidelines, Title 14 California Code of Regulations [CCR] § 15000 et seq.). Los Angeles County Waterworks District No. 29, Malibu is the lead agency for this document, meaning that they have the principal responsibility for carrying out the project, through LACDPW. Responsible agencies include any other public agency that will issue a discretionary approval for the project; this EIR covers the responsible agencies' approvals, also (CEQA Guidelines § 15096). Several responsible agencies may need to make approvals for the proposed project, including one federal agency, five state agencies, one regional agency, and

four local agencies, listed below (see Section 2.7, *Responsible Agencies and Project Approvals*, for more information).

- **U.S. Army Corps of Engineers** (USACE): Clean Water Act Section 404 permits
- **California Department of Fish and Wildlife** (CDFW): Section 1602 Lake or Streambed Alteration Agreement
- **Caltrans District 7**: Encroachment permits for PCH and oversized transport vehicles permits
- **State Water Resources Control Board**: National Pollutant Discharge Elimination System (NPDES) General Permit
- **California Regional Water Quality Control Board, Los Angeles Region**: Clean Water Act Section 401 Water Quality Certifications and NPDES Permit/Waste Discharge Requirements
- **California Coastal Commission**: Coastal Zone Regulation Section 13.20.064(C) exemption
- **Los Angeles County Public Works Flood Control District**: Encroachment permits for work within rights-of-way (ROW), easements, or facilities, if necessary
- **South Coast air Quality Management District (SCAQMD):** Temporary electric generation permit, if applicable, and Rule 403
- **Los Angeles County Fire Department**: In Very High Fire Hazard Severity Zones Permit (grading and construction equipment)
- **Los Angeles County Environmental Health Hazardous Material Management Division**: Local Certified Unified Program Agency (hazardous materials and emergency management review)
- **City of Malibu:** Encroachment permits in City streets and easements or rights-of-way for Upper Encinal Tank Improvement

This document is a project-level EIR, fully analyzing the potential impacts related to the proposed project, including construction and operational impacts, direct and indirect impacts, cumulative impacts, and growth-inducing impacts, as well as analyses of significant, irreversible changes to the environment and alternatives to the proposed project that may reduce significant impacts. This EIR is organized based on the latest version of the State CEQA Guidelines, adopted December 28, 2018. On March 21, 2016, LACDPW published a Draft Program EIR for the Los Angeles County District 29 Water System Master Plan (WSMP), with a public review period ending on May 4, 2016 (SCH No. 2014111057). During the public review period, numerous public comments were received that included concerns about public outreach efforts and potential growth in District 29. Therefore, after the public review period, the County chose not to pursue finalization of the Program EIR in order to concentrate on additional outreach. After conducting outreach and further evaluating funding availability and options, District 29 identified improvements to correct the most critical system deficiencies. These deficiencies were prioritized based on operational imperatives, importance to the overall system, and capacity and are addressed in this project-level EIR.

The Executive Summary provides a summary of the EIR (CEQA Guidelines § 15123). This chapter, Chapter 1, *Introduction*, provides the background of the project, a description of the EIR, and a discussion of the public review process. Chapter 2, *Project Description*, describes the project being analyzed in this document (CEQA Guidelines § 15124).

Chapter 3, *Environmental Analysis*, includes the evaluation of 20 topics required by CEQA. For each topic, the EIR is organized into the following discussions:

- Environmental setting (description of the existing conditions) (CEQA Guidelines § 15125)
- Regulatory setting (description of laws, regulations, and policies applicable to the project)
- Impacts and mitigation (description of thresholds for determining significance of impacts, impacts of construction and operation of the project, and mitigation if necessary) (CEQA Guidelines § 15126)

Chapter 4, *Summary of Impacts*, describes significant environmental effects of the proposed project, impacts that were found to be less than significant, and topics with no impacts (CEQA Guidelines §§ 15126.2(b) and 15128). Chapter 5, *Cumulative Impacts*, discusses the cumulative impacts, which are impacts that would occur if the impacts of the proposed project combine with the impacts of other projects and/or growth to result in cumulative impacts (CEQA Guidelines § 15130). Potential growth-inducing impacts are addressed in Chapter 6, *Growth-Inducing Impacts*, which discusses whether the project would foster or facilitate economic or population growth or remove obstacles to growth (CEQA Guidelines § 15126.2(d)). Chapter 7, *Significant, Irreversible Environmental Changes*, analyzes the proposed projects potential to result in significant irreversible changes, including uses of nonrenewable resources or irreversible damage from environmental accidents (CEQA Guidelines § 15126.2(c). Chapter 8, Alternatives Analysis, includes a discussion of alternatives to the proposed project (CEQA Guidelines § 15126.6). Finally, Chapter 9 provides a list of preparers of this document.

1.3 Public Review

For an EIR, CEQA provides for public review at two times in the EIR process: after the filing of a Notice of Preparation (NOP) and after the completion of the Draft EIR. The public review process after the NOP is called the *scoping period* and usually takes place over a 30-day period (CEQA Guidelines § 15102). For some types of projects, CEQA requires at least one public meeting during this review period, called a *scoping meeting*. For the proposed project, this scoping meeting was required because the project would affect highways or other facilities under the jurisdiction of the California Department of Transportation (Caltrans).

The other review period, after the release of the Draft EIR, is usually 45 days, with projects that have a state agency as the lead agency or a responsible agency requiring a minimum 45-day comment period (CEQA Guidelines § 15105). The proposed project has state-responsible agencies, so this Draft EIR requires a 45-day public-review period.

1.3.1 Scoping Period

The NOP for the District 29 improvements EIR was filed with the California State Clearinghouse on November 9, 2017, and distributed to 32 other agencies. This began the scoping period, which lasted until December 18, 2017, a 39-day comment period extended from the required 30 days due to the Thanksgiving holiday during this review period. Scoping meetings were held at the following locations:

- Topanga Elementary School
  22075 Topanga School Road
  Topanga, California 90290
  Tuesday, November 14, 2017, 6:30–8:30 p.m.

- Malibu City Hall–Multipurpose Room
  23825 Stuart Ranch Road
  Malibu, CA 90265
  Thursday, November 16, 2017, 6:30–8:30 p.m.

At each scoping meeting, District 29 and their environmental consulting firm preparing the EIR under the County's direction made a presentation. Issues that were identified during the scoping period include:

- Concerns about traffic and access during the construction period.
- Concerns about adequate fire flow.
- Concerns about landslides.
- Concerns about the timing of construction. .
- Concerns about noise during construction
- Concerns about staging areas for trucks.
- Concerns about whether roadways can support the weight of construction vehicles.
- Concerns about impacts to residences around the Fernwood Tank improvements due to narrow roads, proximity of residences to the site, fire access during construction, the procedure for removing old tanks, and the configuration and materials for new tanks.
- Requests that District 29 concentrate on providing adequate and reliable water service to existing customers.
- Requests that District 29 concentrate on providing expanded water service to allow for additional development.
- Questions about the changes in the priorities for District 29 improvements since the 2016 Draft Program EIR.
- Concerns about the costs and schedule of environmental process.

Since the scoping period, the list of improvements and staging areas has evolved and now includes removing one creek crossing improvement and one staging area and including an additional tank improvement and staging area.

1.3.2 Areas of Controversy and Issues to be Resolved

The primary area of controversy raised during the public scoping period was related to which potential improvements would be included in the proposed project and which would not. The commenters were divided between those that wanted only improvements that would serve existing customers and those that would allow expansion of the water service to allow more new customers. Areas of controversy related to environmental issues for the proposed project were primarily concerned about construction impacts, including impacts on traffic and fire access, as well as the weight of construction vehicles on roads. The construction and permanent impacts in the vicinity of the Fernwood Tank improvements was also a concern.

1.3.3 Draft EIR Comment Period

The District 29 Draft EIR will be available for public review for a 45-day comment period as required by CEQA from October 28, 2020 through December 14, 2020. Methods for making comments on the Draft EIR are listed below.

By mail:

Eduardo Maguino, Project Manager
County of Los Angeles Department of Public Works
Waterworks Division
P.O. Box 1460
Alhambra, CA 91802-1460

By email:

waterworksprojects@dpw.lacounty.gov

On website:

https://dpw.lacounty.gov/wwd/web/SystemImprovements/DistrictNo29.aspx

A public meeting will be held during the public review period. To protect public health and prevent the spread of the novel coronavirus (COVID-19), this meeting will be virtual. Details regarding the date, time, and method will be provided at a later date. To send questions on the project's CEQA document and/or process to receive a notice for this meeting, send a request to the email above.

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Chapter 2
Project Description

2.1 Introduction

This chapter describes the Los Angeles County Waterworks District No. 29 Priority Capital Deficiencies Improvements Project (proposed project or District 29 improvements), which is evaluated in this environmental impact report (EIR). Topics addressed in this chapter include an overview of the proposed project, the project objectives, a description of the project location and existing conditions at the site, a description of the proposed project's characteristics, and the intended uses for this EIR, including required approvals.

2.2 Project Overview

Waterworks District No. 29 (District 29) supplies water to approximately 20,000 people in the city of Malibu and unincorporated area of Topanga. District 29 was established in 1959. Historically, water system facilities were acquired from various small mutual water companies and the infrastructure is aging. Some of the acquired facilities were originally constructed in the 1940s and 1950s. District 29 is supplied by a 30-inch-diameter transmission pipeline that was built during the 1960s. Major water system infrastructure facilities in District 29 include approximately 249 miles of water main and 47 tanks with a total storage capacity of 20 million gallons.

The proposed project would include the following:

- Demolition of two 50,000-gallon water tanks and construction of one tank reservoir in the unincorporated area of Topanga.
- Demolition of one 70,000-gallon water tank and construction of one 225,000-gallon tank reservoir in Malibu.
- Replacement of approximately 34,300 feet of existing underground water pipeline, ranging from 1.5 inches to 30 inches, in the city of Malibu and the county of Los Angeles, with new pipeline(s) ranging from 8 inches to 18 inches, 19,000 feet of which are along Pacific Coast Highway (PCH).
- Construction of approximately 6,300 feet of new underground 12-inch pipeline in the city of Malibu.
- Repairing several creek crossing locations by replacing and recoating segments of pipe and air release valves on PCH. The pipeline segments would be constructed underground in existing city of Malibu, county of Los Angeles, and California Department of Transportation (Caltrans) roadways (See Section 2.5.1, *Proposed Improvements*, for more detailed information).

2.3 Project Objectives

California Environmental Quality Act (CEQA) Guidelines Section 15124(b) requires an EIR to include a statement of the objectives sought by the proposed project to help the lead agency develop a

reasonable range of alternatives to evaluate in the EIR and to aid decision-makers in preparing findings and/or a statement of overriding consideration, if necessary. The objectives of the proposed project are to:

- Provide a more reliable water system for existing Waterworks District 29 customers; and
- Complete the most critical water system improvements that have been identified in Waterworks District 29 over the next 6 years.

2.4 Project Location and Environmental Setting Overview

2.4.1 Project Location

The proposed project, which consists of several separate geographically related improvements, would be located in District 29's service area, in southwestern Los Angeles County. District 29's water service area consists of the city of Malibu and the unincorporated area of Topanga. The city of Malibu is located on a narrow strip of the region along approximately 22 miles the coastline with numerous canyons extending northward.

District 29's service area is bounded on the north by the steep and rugged Santa Monica Mountains, on the east by Topanga Canyon and the City of Los Angeles boundary, on the west by Ventura County, and on the south by the Pacific Ocean. District 29 occupies an area of about 47 square miles (30,000 acres). The service area contains large areas of open space and the water bodies of Topanga Creek, Malibu Creek and numerous other creeks that drain the Santa Monica Mountains southward to the Pacific Ocean. The District 29 boundaries span four United States Geological Survey (USGS) 7.5-minute quadrangles, from west to east: Triunfo Pass, Point Dume, Malibu Beach, and Topanga. **Figure 2-1, Vicinity Map**, to follow, shows the project vicinity in relation to adjacent cities and communities.

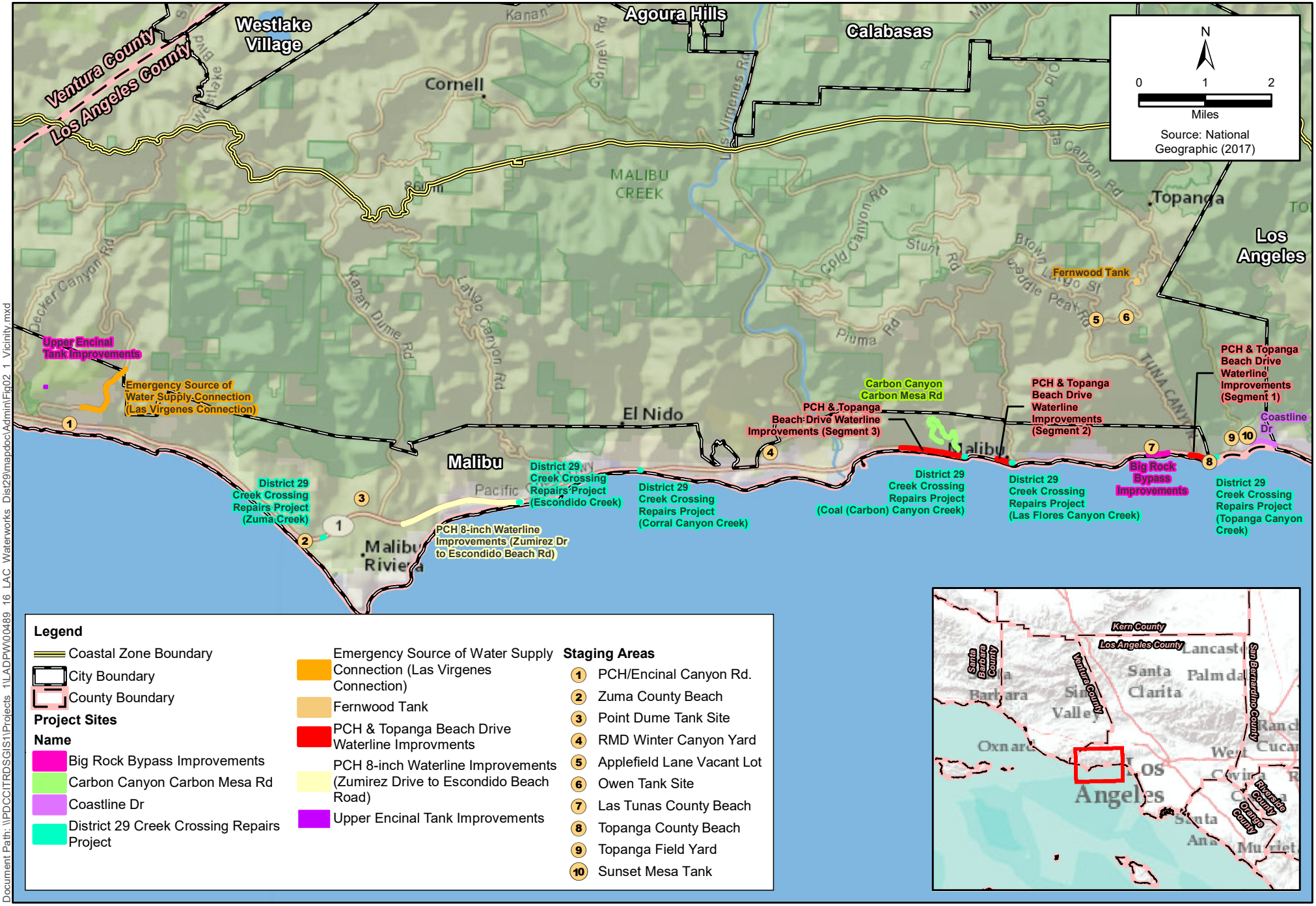

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Figure 2-1
Vicinity Map
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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2.4.2 Regional Setting

The area encompassing the proposed improvements is along the coastal slopes of the Santa Monica Mountains. This area of Los Angeles County and the city of Malibu, is generally sparsely populated, with development concentrated along the coastal areas in Malibu and in the spall communities in unincorporated areas. Most of the undeveloped area is characterized by relatively rugged topography, including many canyons. The region is covered by a variety of terrestrial, freshwater, and marine habitats, including scrub communities, woodlands, nonnative grassland, and riparian areas. The climate is classified as dry summer subtropical or Mediterranean, characterized by hot, dry summers and relatively cool, moist winters. However, the region experiences a high level of variability, with very wet years and very dry years. It is subject to repeated wildland fires and flooding and debris flow events, such as the recent Woolsey Fire (November 8 to November 22, 2018) and its aftermath (City of Malibu 2019).

2.4.3 City of Malibu

Most of the proposed project improvements are within the city of Malibu, located in Los Angeles County northwest of the city of Los Angeles. The city is generally bounded on the north by the Santa Monica Mountains, on the east by Topanga Canyon, on the west by Ventura County, and on the south by the Pacific Ocean. Most of the land uses in Malibu are residential, with occasional neighborhood and visitor service facilities. However, the majority of the land in the city (approximately 75 percent) is undeveloped and designated open space. The community of Malibu remained under the jurisdiction of Los Angeles County until its incorporation in 1991 (City of Malibu 2017).

2.4.4 Unincorporated Los Angeles County

A smaller part of the proposed project is in unincorporated portions of western Los Angeles County. This area in east and north of Malibu, just west of the City of Los Angeles. This area is part the Los Angeles County's Santa Monica Mountains Planning Area. This is a sparsely populated area.

2.4.5 Existing District 29 Facilities

The District 29 water distribution system has two divisions, the Malibu division and the Topanga division. The Malibu division comprises about 12,000 acres and the Topanga division 17,000 acres. Major water system infrastructure facilities in District 29 include approximately 249 miles of water main and 47 tanks with a total storage capacity of 20 million gallons.

Water in District 29 is supplied by a 30-inch diameter transmission main line that lies along the coastline within PCH, with several distribution pipelines extending northward into the canyons. The Topanga community supply is delivered through the Topanga Beach pumping station, which pumps from this transmission main. Several other pumping stations transport Topanga supply water to the higher zones. Similarly, water for the Malibu system is pumped at several locations from the main transmission pipeline into the canyons. The Malibu Beach pumping station is an in-line pumping station and maintains pressure in the western half of the transmission main line. Table 2-1 summarizes the major existing facilities in the District 29 distribution system.

The aging water system infrastructure, coupled with the unique topography of the region, causes the cost for operations and maintenance to be higher in District 29 than in other Los Angeles County

Waterworks districts, as described in the Malibu and the Marina Del Rey Water System 2010 Urban Water Management Plan (UWMP) (County of Los Angeles 2017).

Table 2-1. Summary of Existing Facilities in the District 29 Distribution System

Facility Type	Number
Storage Reservoirs	47
Pumping Stations	31
Pressure Regulation Stations	51
Pipeline 2 inches in diameter	249 miles
Imported Water Connections (including emergency connections)	6
Customer Connections	7,561

2.5 Proposed Project

2.5.1 Proposed Improvements

On March 21, 2016, the Los Angeles County Department of Public Works (LACDPW) published a Draft Program EIR for the Los Angeles County District 29 Water System Master Plan (WSMP), with a public review period ending on May 4, 2016 (SCH No. 2014111057). The draft WSMP identified anticipated water system improvements through the year 2035. During the public review period, numerous public comments were received and the County chose not to pursue finalization of the Program EIR. Since then, District 29 identified improvements to correct the most critical system deficiencies. These deficiencies were prioritized based upon operational imperatives, importance to the overall system, and capacity.

Based upon this process, the proposed project includes:

- Demolition of three water tanks and construction of two tank reservoirs in the unincorporated area of Topanga and the city of Malibu.
- Replacement of approximately 34,300 feet of underground water pipeline in the city of Malibu and Los Angeles County, 19,000 feet of which are along PCH.
- Construction of approximately 6,300 feet of new underground pipeline in the city of Malibu.
- Repair of several creek crossing by replacing and recoating segments of pipe and air release valves on PCH in the city of Malibu and County of Los Angeles.

The pipeline segments would be constructed underground in existing roadways. Nine improvements comprise the proposed project and are analyzed in this document at a project level. The nine improvements were identified based upon operational imperatives, importance to overall system, and capacity. The infrastructure's ability to meet domestic and fire protection requirements for existing customers, regional criticality, and condition was considered. Each of the nine improvements is described below. **Figure 2-2, Project Location**, shows the locations of these improvements. For addresses, see **Table 2-2** (to follow).

1. **Carbon Canyon Road and Carbon Mesa Road Waterline Improvements**: This improvement would include the replacement of 7,239 feet of aging and severely deteriorating waterlines that are subject to leaks, ranging in size from 1.5 to 4 inches in diameter, with 601

feet of 8-inch-diameter steel pipe and 6,638 feet 12-inch-diameter steel pipe. No trees would be removed, and no aboveground structures would be introduced. All proposed work would be performed within the existing right-of-way (ROW). Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., concrete/asphalt sawing and excavation). **Figure 2-3a and 2-3b, Carbon Canyon Road and Carbon Mesa Road Waterline Improvements**, shows the proposed location of this improvement, including the proposed construction staging location.

2. **Coastline Drive 12-Inch Waterline Improvements**: This improvement would replace over 2,000 feet of leak-prone, aging, and severely deteriorated 12-inch waterline. All proposed work would be performed within the existing ROW. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., concrete/asphalt sawing and excavation). **Figure 2-4, Coastline Drive 12-inch Waterline Improvements**, shows the proposed location of this improvement, including the proposed construction staging location.

3. **District 29 Creek Crossing Repairs**: These improvements would repair the region's water main at several creek-crossing locations on PCH. The waterline at the locations listed in Table 2-2 is severely deteriorated and subject to leaks. Construction staging would occur in close proximity to the repair sites. All proposed creek repair work would be performed within the existing ROW. No ground disturbance would occur. No physical work would occur in the creeks and construction would be programmed to occur during the dry season. No temporary structures or heavy machinery would be allowed within the creeks. No dewatering or diversion would occur. No vegetation would be removed. **Figure 2-5, District 29 Creek Crossing Repairs**, shows the proposed repair locations, including the proposed construction staging location. In the Notice of Preparation (NOP) for the Los Angeles County Waterworks District No. 29 Priority Capital Deficiencies Improvements Project (Appendix A), an additional creek crossing repair was included (over Trancas Creek). Since the NOP, District 29 has been informed that the Caltrans intends to replace the bridge that includes the waterline, although the design of the new bridge is not yet available. Therefore, this crossing repair has been removed from the proposed project. District 29 will work with Caltrans as they design the bridge and analyze the new bridge under CEQA.

4. **Fernwood Tank Improvement**: This improvement would replace two aging and severely deteriorated 50,000-gallon tanks with a single 200,000-gallon tank. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., ground clearance and grading). This improvement may require removal of small trees (see Section 3.4, *Biological Resources*). **Figure 2-6, Fernwood Tank Improvement**, shows the proposed improvement location, including the proposed construction staging location.

5. **PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)**: This improvement would replace approximately 9,500 linear feet of aged and deteriorated 6-inch diameter steel water line with an 8-inch diameter steel water line in PCH between Zumirez Drive to Escondido Beach Road. This improvement would include the replacement or removal of aging water pipes located on three bridge creek crossings. All proposed work would be performed within existing ROW. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., concrete/asphalt sawing and excavation). **Figures 2-7a and 2-8b, PCH 8-inch Waterline**

Improvements (Zumirez Drive to Escondido Beach Road), shows the proposed improvement location including the proposed construction staging location.

6. **PCH and Topanga Beach Drive Waterline Improvements:** This improvement would include the replacement of over 8,000 feet of aging, severely deteriorating waterlines that are subject to leaks, replacing 4- and 6-inch-diameter waterline with an 8-inch-diameter steel waterline. All proposed work would be performed within existing ROW. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., concrete/asphalt sawing and excavation). **Figures 2-8a through 2-8c, PCH and Topanga Beach Drive Waterline Improvements, Segments 1, 2, and 3,** respectively, respectively, show the proposed improvement location of the three segments of these improvements, including the proposed construction staging location.

7. **Emergency Source of Water Supply Connection (Las Virgenes Connection):** This improvement would include the construction of approximately 6,300 feet of 12-inch-diameter emergency-use steel transmission waterline that would connect to the Las Virgenes Municipal Water District. It would provide a mutual water source capability for the region in case of emergencies if the 30-inch-diameter main line were interrupted. All proposed work would be performed within the public-road ROW. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (i.e., concrete/asphalt sawing and excavation). **Figure 2-9, Emergency Source of Water Supply Connection (Las Virgenes Connection)**, shows the proposed improvement location including the proposed construction staging location.

8. **Big Rock Bypass Improvements:** This improvement would include the construction of a 1,500-foot bypass for the region's main line. The bypass would consist of three parallel pipelines in PCH to preserve the integrity of the Malibu water supply and prevent water leaks in the loose soils below PCH at Big Rock. Additionally, the improvement would include the replacement of three 10-inch-diameter and one 30-inch-diameter parallel water mains with three 18-inch-diameter steel water mains. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities. **Figure 2-10, Big Rock Bypass Improvements**, shows the proposed improvement location including the proposed construction staging location.

9. **Upper Encinal Tank Improvement:** This improvement would replace an aging and severely deteriorated 70,000-gallon tank with a 225,000-gallon tank, with additional easements and/or right-of-way to be acquired by the County. Construction staging would occur in close proximity to the improvement site. Construction activities would include ground-breaking activities (ground clearance and grading). This area needs significant grading, erosion control, and with earth-retaining structures to increase the buildable area to house a larger diameter water tank. **Figure 2-11, Upper Encinal Tank Improvement**, shows the proposed improvement location, including the proposed construction staging location.

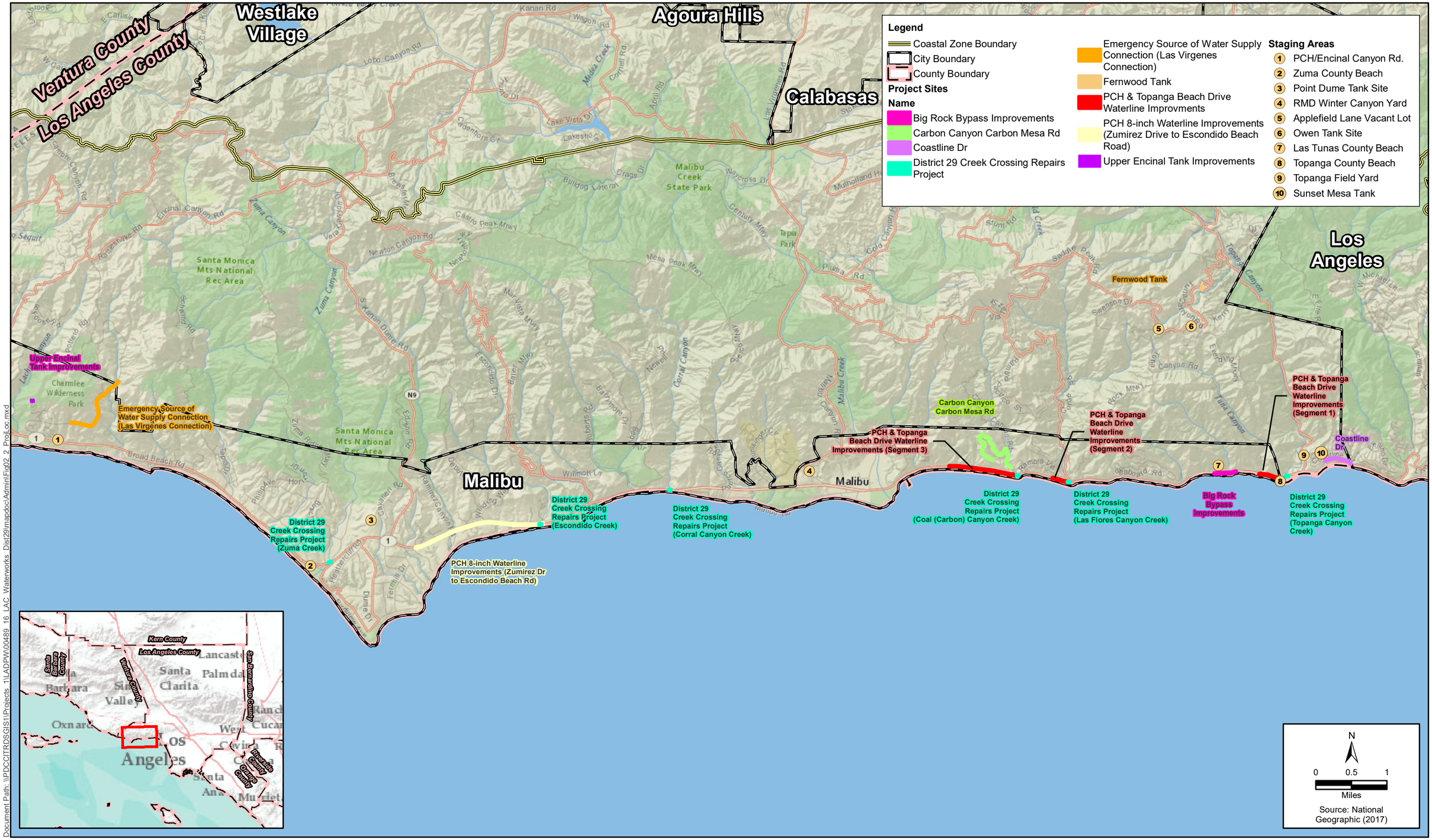

Figure 2-2
Project Location
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-3a
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-3b
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-4
Coastline Drive 12-inch Waterline Improvements
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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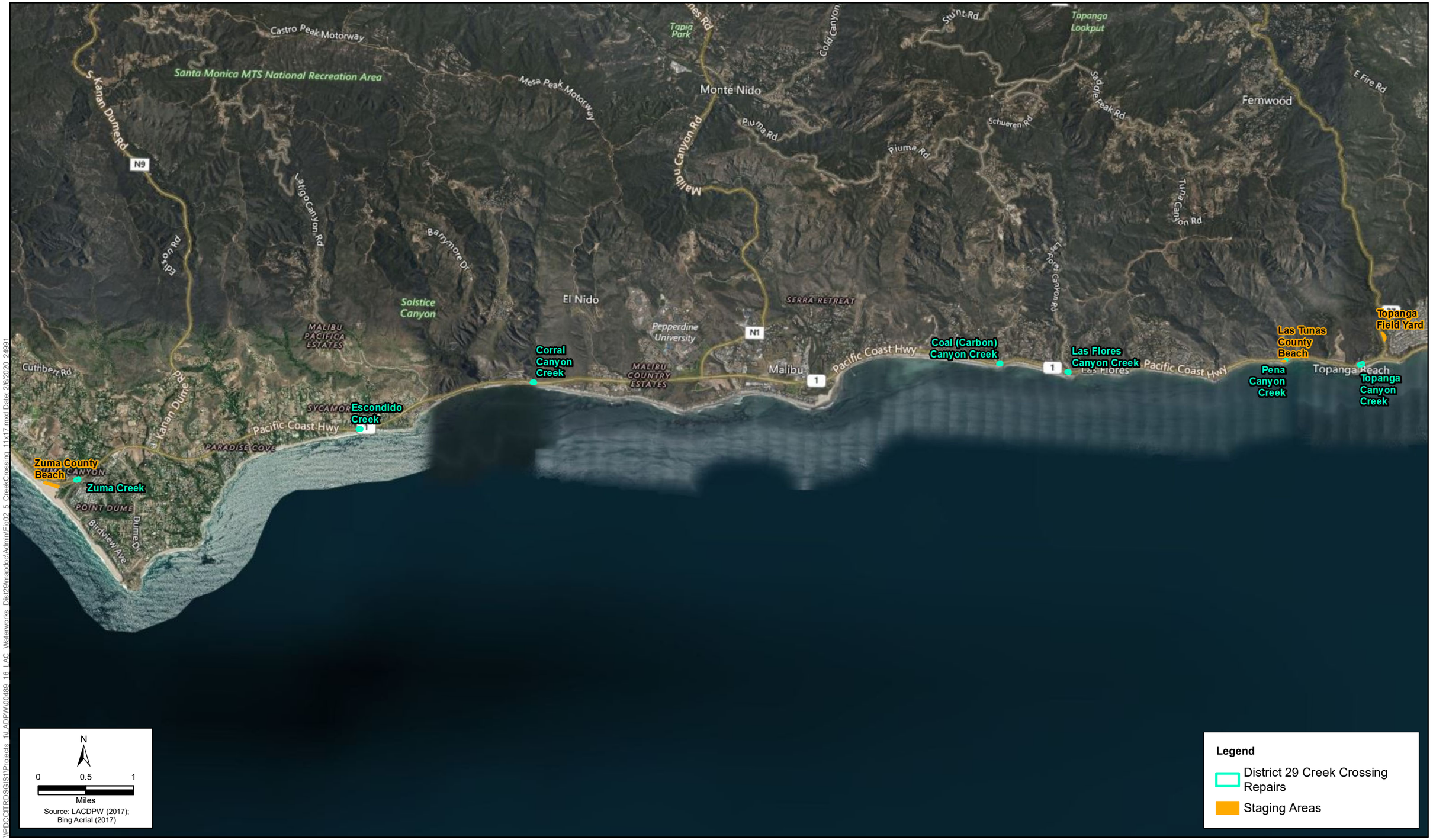

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Figure 2-5
District 29 Creek Crossing Repairs
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-6
Fernwood Tank Improvement
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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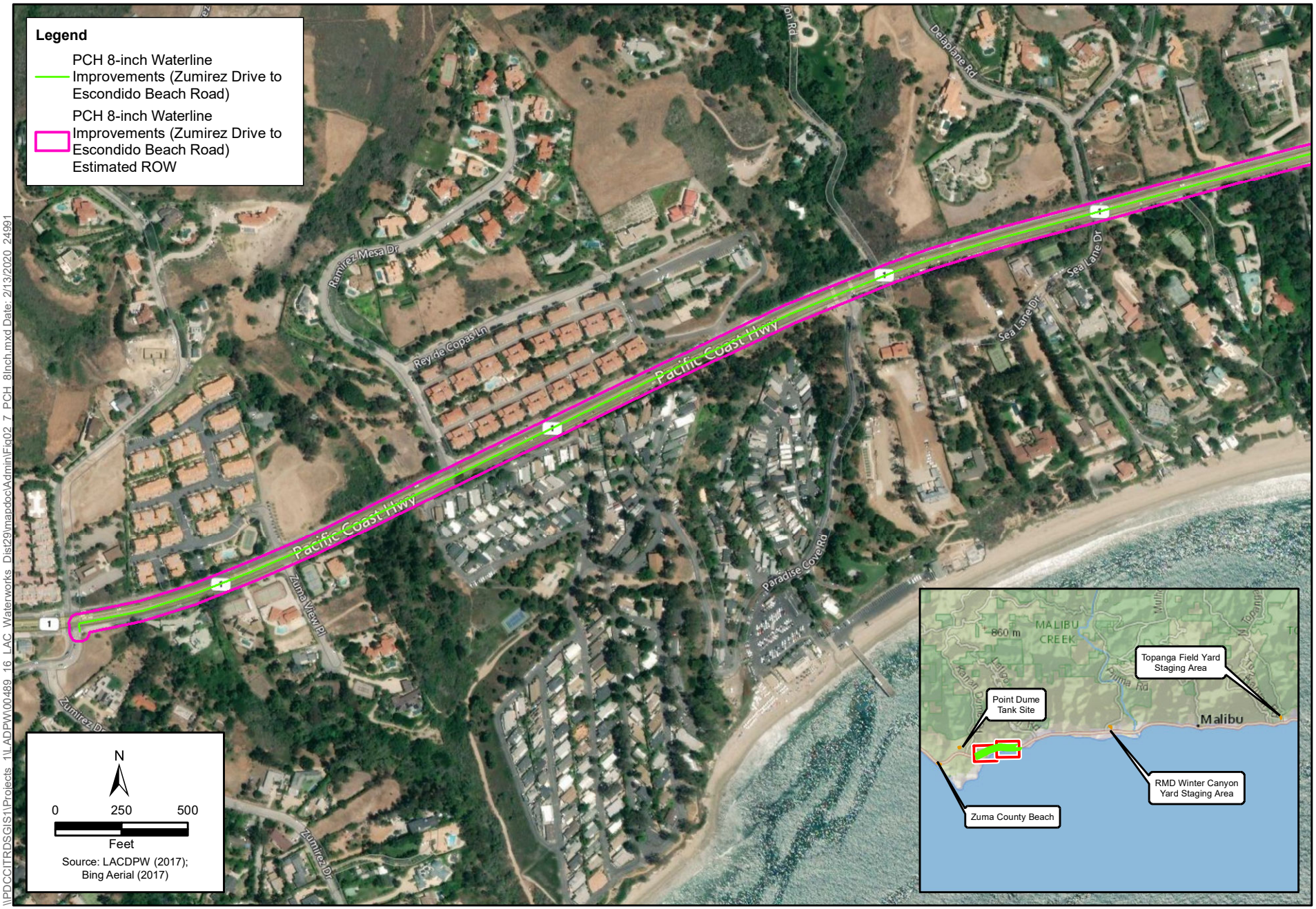

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Figure 2-7a
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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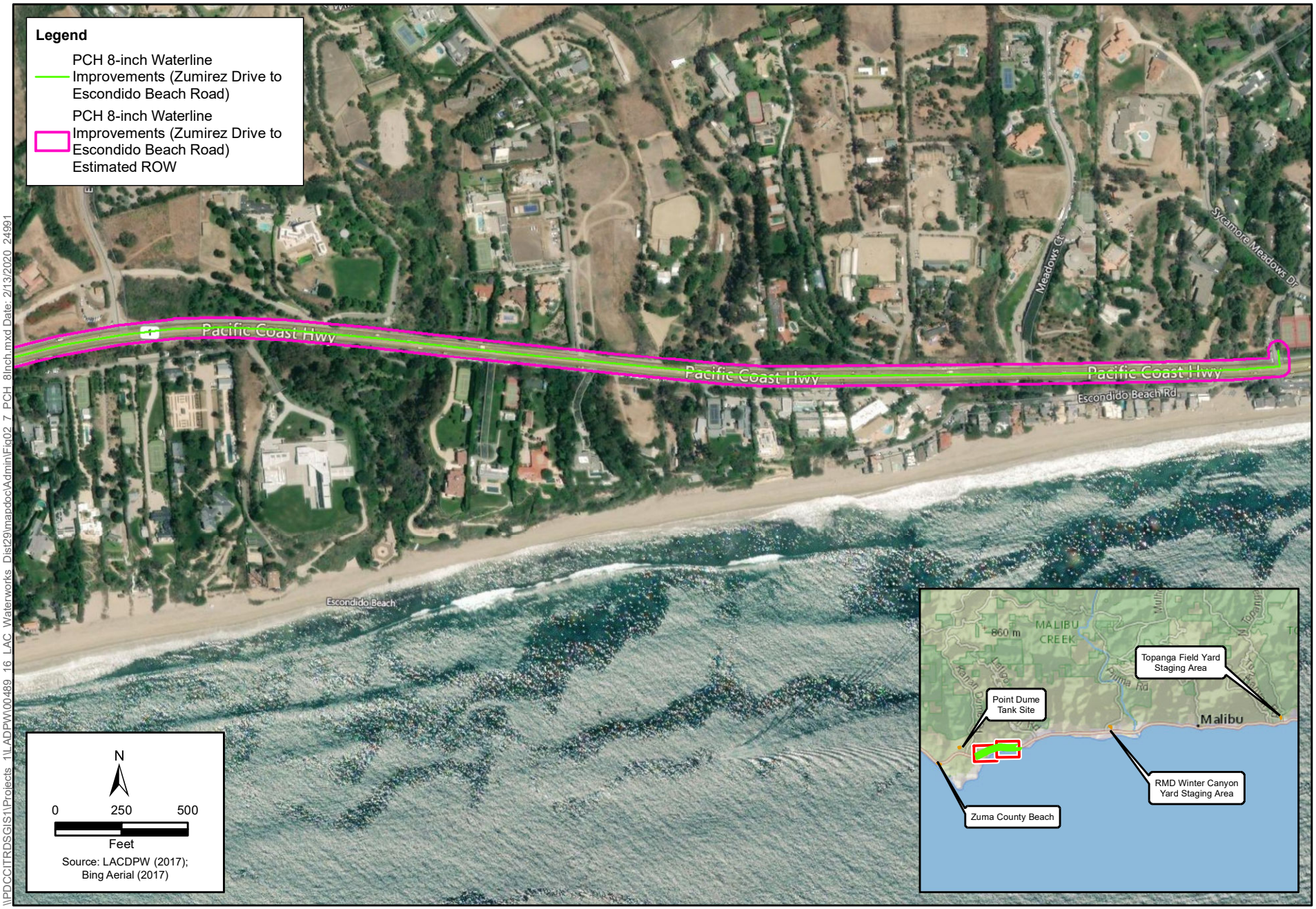

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Figure 2-7b
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-8a
PCH and Topanga Beach Drive Waterline Improvements, Segment 1
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-8b
PCH and Topanga Beach Drive Waterline Improvements, Segment 2
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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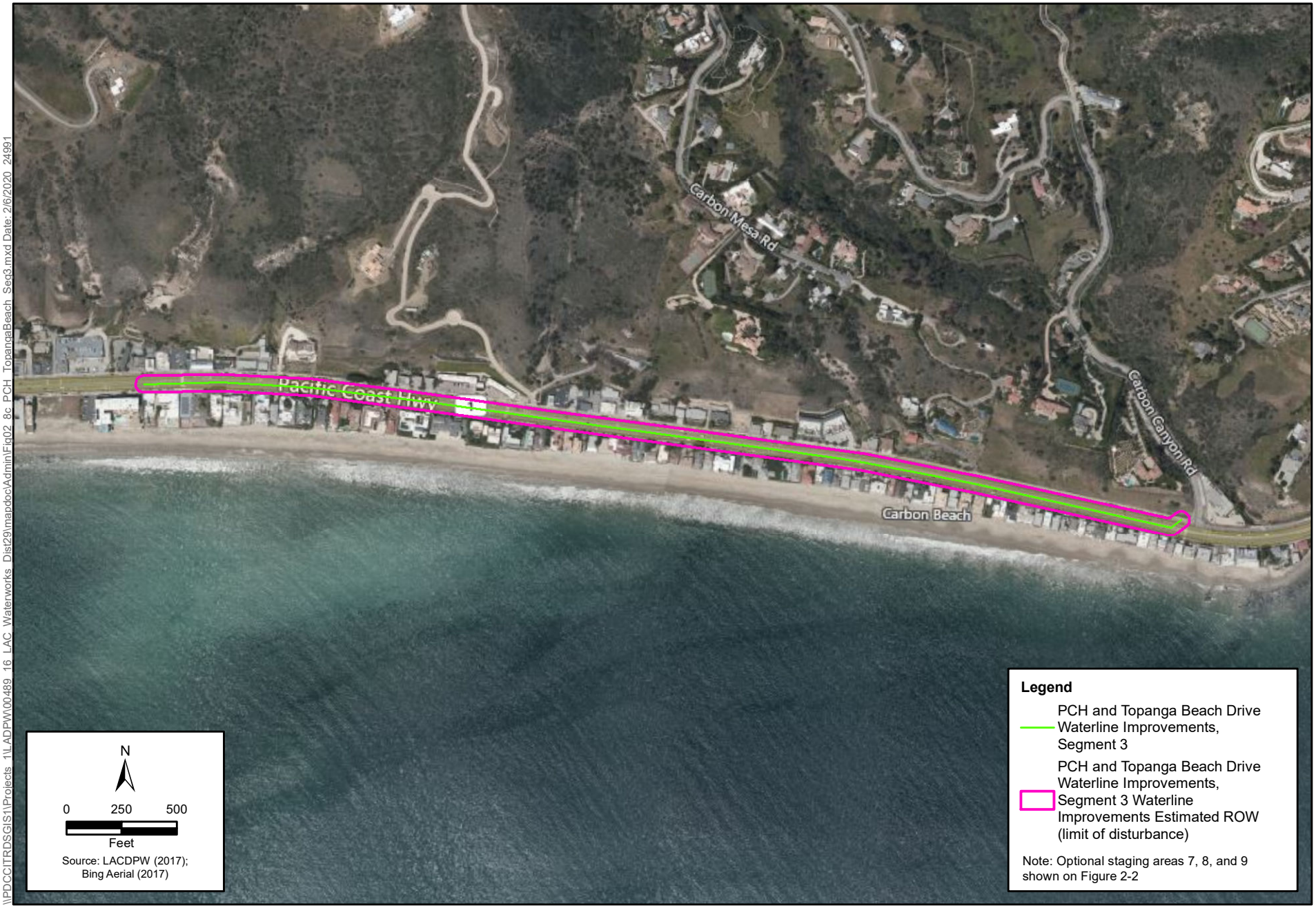

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Figure 2-8c
PCH and Topanga Beach Drive Waterline Improvements, Segment 3
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-9
Emergency Source of Water Supply Connection (Las Virgenes Connection)
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Figure 2-10
Big Rock Bypass Improvements
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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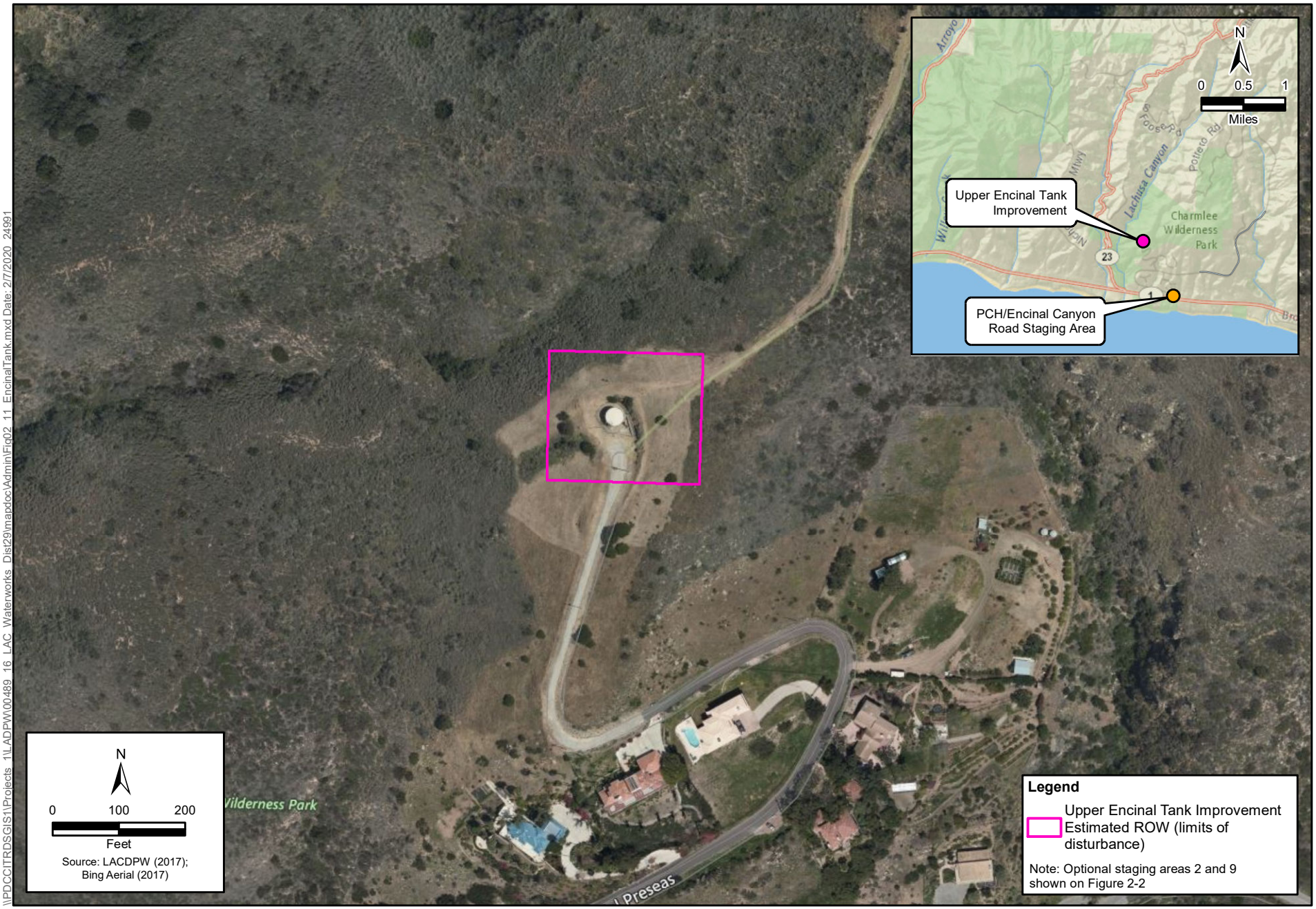

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Figure 2-11
Upper Encinal Tank Improvement
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Table 2-2. Waterworks District 29 Proposed Project Improvements

	Improvement	Approximate Address	Description
1	Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	3873 Carbon Canyon Road to 22576 Carbon Mesa Road, Malibu 90265	Replace over 7,239 feet of aging and severely deteriorating waterlines that are subject to leaks, ranging in size from 1.5 to 4 inches in diameter, with 8- and 12-inch-diameter steel pipe.
2	Coastline Drive 12-inch Waterline Improvements	18000 to 18303 Coastline Drive, Malibu 90265	Replace over 2,000 feet of aging and severely deteriorating waterlines that are subject to leaks, by replacing a 12-inch-diameter waterline with a 12-inch-diameter steel waterline.
3	District 29 Creek Crossing Repairs		Repair the region's water main at several creek crossing locations on PCH. The waterline at these locations is aging, severely deteriorating, and subject to leaks.
	Topanga Canyon Creek	18788 PCH, Los Angeles, 90265	
	Pena Canyon Creek	19399 PCH, Malibu 90265	
	Las Flores Canyon Creek	21203 PCH, Malibu, 90265	
	Coal (Carbon) Canyon Creek	21857 PCH, Malibu, 90265	
	Corral Canyon Creek	25712 PCH, Malibu, 90265	
	Escondido Creek	27519 PCH, Malibu, 90265	
	Zuma Creek	29497 PCH, Malibu, 90265	
4	Fernwood Tank Improvement	19837 Horseshoe Drive, Topanga 90290	Replace two aging and severely deteriorating 50,000-gallon tanks that are subject to leaks with a single 200,000-gallon steel tank.
5	PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	6480 Via Escondido Drive to 28734 PCH, Malibu 90265	Replace over 9,500 feet of aging and deteriorating 6-inch-diameter waterline that is subject to leaks with an 8-inch-diameter steel waterline.
6	PCH and Topanga Beach Drive Waterline Improvements	18808 to 18980 PCH, Malibu 90265 21150 to 21434 PCH, Malibu 90265 21746 to 22716 PCH, Malibu 90265	Replace over 8,000 feet of aging, severely deteriorating waterlines that are subject to leaks, replacing 4-inch and 6-inch-diameter waterline with an 8-inch-diameter steel waterline.

	Improvement	Approximate Address	Description
7	Emergency Source of Water Supply Connection (Las Virgenes Connection)	3525 to 4400 Encinal Canyon Road, Malibu 90265	Construct 6,300 feet of 12-inch-diameter emergency use steel transmission waterline to connect to Las Virgenes Municipal Water District to provide a mutual water source capability for the region in case of emergencies if the 30-inch-diameter main line is interrupted.
8	Big Rock Bypass Improvements	19562 to 19742 PCH, Malibu, 90265 (end of Vista Del Preseas Road)	Construct a 1,500-foot bypass for the region's main line. The bypass would consist of three parallel pipelines in PCH to preserve the integrity of the Malibu water supply and prevent water leaks in the loose soils below PCH at Big Rock. Replace three 10-inch-diameter and one 30-inch-diameter parallel water mains with three 18-inch-diameter steel water mains.
9	Upper Encinal Tank Improvement	North of 4501 Vista Del Preseas, Malibu, 90265	Replace aging and severely deteriorating 70,000-gallon tank with a 225,000-gallon steel tank.

2.5.2 Construction

As described above, construction of the nine improvements included under the proposed project would vary in duration and in start times based upon type of construction. Generally, construction activities would begin in January 2022 and end in September 2026, although some flexibility has been built into the schedule to accommodate potential reprioritization, weather, and other unforeseen circumstances. Staging locations of the proposed improvements would be in proximity to the respective improvement sites. Table 2-3 identifies the construction schedule and staging location for each improvement. The dates in the schedule are used in this EIR for analysis purposes.

Construction would begin with initial site preparation, which would enable machinery and equipment to access and work within the site. Haul routes anticipated to be used under construction activities are identified in Table 2-4. The haul routes may include use of any option or multiple options for each staging area.

Table 2-3. Construction Schedule and Staging Locations of Proposed Project

	Improvement	Construction Schedule	Staging Location
1	Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	October 2022–May 2023	Topanga Field Yard
2	Coastline Drive 12-inch Waterline Improvements	June 2022–January 2023	Sunset Mesa Tank Topanga Field Yard
3	District 29 Creek Crossing Repairs	January 2022–June 2022	Zuma County Beach and/or Topanga Field Yard and/or Las Tunas County Beach
4	Fernwood Tank Improvement	April 2024–November 2024	Applefield Lane Vacant Lot and/or Owen Tank Site and/or Topanga Field Yard
5	PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	March 2022–November 2022	Point Dume Tank Site and/or Topanga Field Yard and/or RMD[1] Winter Canyon Yard and/or Zuma County Beach
6	PCH and Topanga Beach Drive Waterline Improvements	April 2024–November 2024	Las Tunas County Beach and/or Topanga County Beach and/or Topanga Field Yard
7	Emergency Source of Water Supply Connection (Las Virgenes Connection)	July 2022–March 2023	Zuma County Beach (6463 Surfside Way) and/or Northwest intersection of Encinal Canyon Road & PCH (Parcel 4473-005-004) and/or Topanga Field Yard
8	Big Rock Bypass Improvements	January 2026–September 2026	Topanga Field Yard and/or Las Tunas County Beach and/or Topanga County Beach
9	Upper Encinal Tank Improvement	May 2022–January 2023	Option 1: Northwest intersection of Encinal Canyon Road & PCH (Parcel 4473-005-004) and/or Zuma County Beach (6463 Surfside Way) and/or Topanga County Beach

[1] RMD = Road Maintenance Division

Table 2-4. Haul Routes for Proposed Project

	Improvement	Haul Route
1	Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	From Topanga Field Yard at 3800 Topanga Canyon Boulevard to construction site.
2	Coastline Drive 12-inch Waterline Improvements	Option 1: From Sunset Mesa Tank at 3831 Castlerock Road, Malibu to construction site. Option 2: From Topanga Field Yard at 3800 Topanga Canyon, Malibu Boulevard to construction site.

	Improvement	Haul Route
3	District 29 Creek Crossing Repairs	Assuming all proposed staging areas are available for construction, the haul route would be from closest staging area to construction sites.
4	Fernwood Tank Improvement	Option 1: From Applefield Lane vacant lot (across from 21206 Saddle Peak Road), to Topanga Canyon Boulevard, to Horseshoe Drive to construction site. Option 2: From Owen Tank at 2300 Tuna Canyon Road, to Topanga Canyon Boulevard, to Horseshoe Drive, to construction site. Option 3: From Applefield Lane vacant lot, to Topanga Canyon Boulevard, to Fernwood Pacific Drive, to construction site. Option 4: From Owen Tank at 2300 Tuna Canyon Road, to Topanga Canyon Boulevard, to Fernwood Pacific Drive, to construction site. Option 5: From Topanga Field Yard at 3800 Topanga Canyon Boulevard, Malibu, to Fernwood Pacific Drive, to construction site. Option 6: From Topanga Field Yard at 3800 Topanga Canyon Boulevard, Malibu, to Horseshoe Drive, to construction site.
5	PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	Assuming all proposed staging areas are available for construction, the haul route will be from the closest staging area to the construction site.
6	PCH and Topanga Beach Drive Waterline Improvements	Option 1: From Las Tunas County Beach on PCH to construction site. Option 2: From Topanga County Beach on PCH to construction site. Option 3: From Topanga Field Yard at 3800 Topanga Canyon Boulevard, Malibu, on PCH to construction site.
7	Emergency Source of Water Supply Connection (Las Virgenes Connection)	Option 1: From Zuma County Beach's parking lot to construction site. Option 2: Topanga Field Yard to construction site. Option 3: From dirt shoulder northwest of intersection of Encinal Canyon Road and PCH (Parcel 4473-005-004) to construction site.
8	Big Rock Bypass Improvements	Option 1: Las Tunas County Beach parking area across from Pena Road, adjacent on PCH to construction site. Option 2: From Topanga County Beach's unpaved vacant lot/parking lot along PCH, next to 18820 Pacific Coast Hwy, Malibu on PCH to construction site. Option 3: From Topanga Field Yard at 3800 Topanga Canyon, Malibu Boulevard to construction site.
9	Upper Encinal Tank Improvement	Option 1: From dirt shoulder northwest of intersection of Encinal Canyon Road and PCH (Parcel 4473-005-004) to construction site. Option 2: From Zuma County Beach's parking lot to construction site (west end). Option 3: From Zuma County Beach's parking lot to construction site (west end). Option 4: From Topanga County Beach's unpaved vacant lot/parking lot along PCH, next to 18820 Pacific Coast Hwy, Malibu on PCH to construction site.

2.5.3 Operation and Maintenance

Public Works currently inspects, operates, and maintains the District 29 facilities throughout the service area. Operations include testing and monitoring water quality; regulating water pressure; and inspecting pump stations, reservoirs and pressure control stations. Maintenance includes repairing control valves and pumps, controls, and fixtures; vegetation control including clearing and grubbing of leaves and debris; and tank/pump interior and exterior recoating. Waterlines within District 29 may be accessed by Public Works staff for water quality testing and monitoring, shutoff, recoating, or other damage assessment and repairs. Chemical used during maintenance of facilities include fuels and lubricants for pump maintenance. Storage at the facilities can include pipe, valves, and water system appurtenances. After the project is completed, facilities would be inspected, operated, and maintained periodically by Public Works personnel, as they are under existing conditions.

2.6 Related Projects

Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. As stated in CEQA, Title 14, Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable." In addition, as stated in the State CEQA Guidelines, it should be noted that "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are cumulatively considerable" (CCR, Title 14, Division 6, Chapter 3, Section 15064(I)(5)).

According to the State CEQA Guidelines:

> Cumulative impacts refer to two or more individual effects that, when considered together, are considerable and compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CCR, Title 14, Division 6, Chapter 3, Section 15355).

The following District 29 projects and other nearby projects are included in the cumulative impact analysis in Chapter 5, *Cumulative Impacts* (see **Figure 2-12, Cumulative Impact Analysis Projects**, to follow):

- **Lower Busch Tank Improvement:** previously approved by the Los Angeles County Board of Supervisors after adoption of Mitigated Negative Declaration [MND] in 2005; to be constructed between March 2021 and November 2021.
- **Civic Center Improvements (Sweetwater):** no adopted environmental document) construction anticipated between June 2021 and June 2022.
- **Owen Tank Improvement:** previously approved by the Los Angeles County Board of Supervisors after adoption of an MND in 2017; to be constructed between March 2021 and November 2021.

- **Malibu Branch Feeder Realignment:** previously approved by the Los Angeles County Board of Supervisors under a statutory exemption; to be constructed between February 2020 and April 2020.
- **Trancas Creek Bridge Replacement Project**: previously approved by Caltrans as an MND in 2018; planned construction dates are December 2020 to June 2022.
- **Civic Center Wastewater Treatment Facility:** previously approved by City of Malibu as an EIR in 2015; Phase 1 was completed in 2019; Phase 2 construction is planned for 2022 to 2024; Phase 3 is scheduled for 2024 to 2028.
- **Crummer Site Subdivision (Case Project):** previously approved by City of Malibu as an EIR in 2014, with an Addendum in 2020; construction begun and is expected to be completed in 2020.
- **La Paz Ranch Project:** previously approved by City of Malibu as an EIR in 2008, with an Addendum in 2015; probably construction to begin in 2020, with a completion date of 2022.
- **Santa Monica College – Malibu Campus Project:** previously approved by Santa Monica College Board of Trustees as an EIR; currently under construction, with a scheduled completion date in 2022.
- **Encinal Canyon Waterline 525/825 Improvements:** previously exempted from CEQA as an emergency project (Statuary 15269); planned construction dates are January 2022 to September 2022.
- **Caltrans PCH Secant Wall Improvements**: planned construction dates are December 2021 to June 2022.

Due to the Woolsey Fire and its aftermath, areas in and near the proposed project location suffered damage, including from the fire itself and from subsequent flooding, mudslides, rockslides, and debris flows. As a result, some previously planned projects in the area, approved by the City of Malibu and Los Angeles County, have been delayed and/or altered. New rebuilding projects will be occurring during the next few years. Because the location, size, and timing cannot be determined, the cumulative impact analysis in the document uses a general approach (except for the projects listed above).

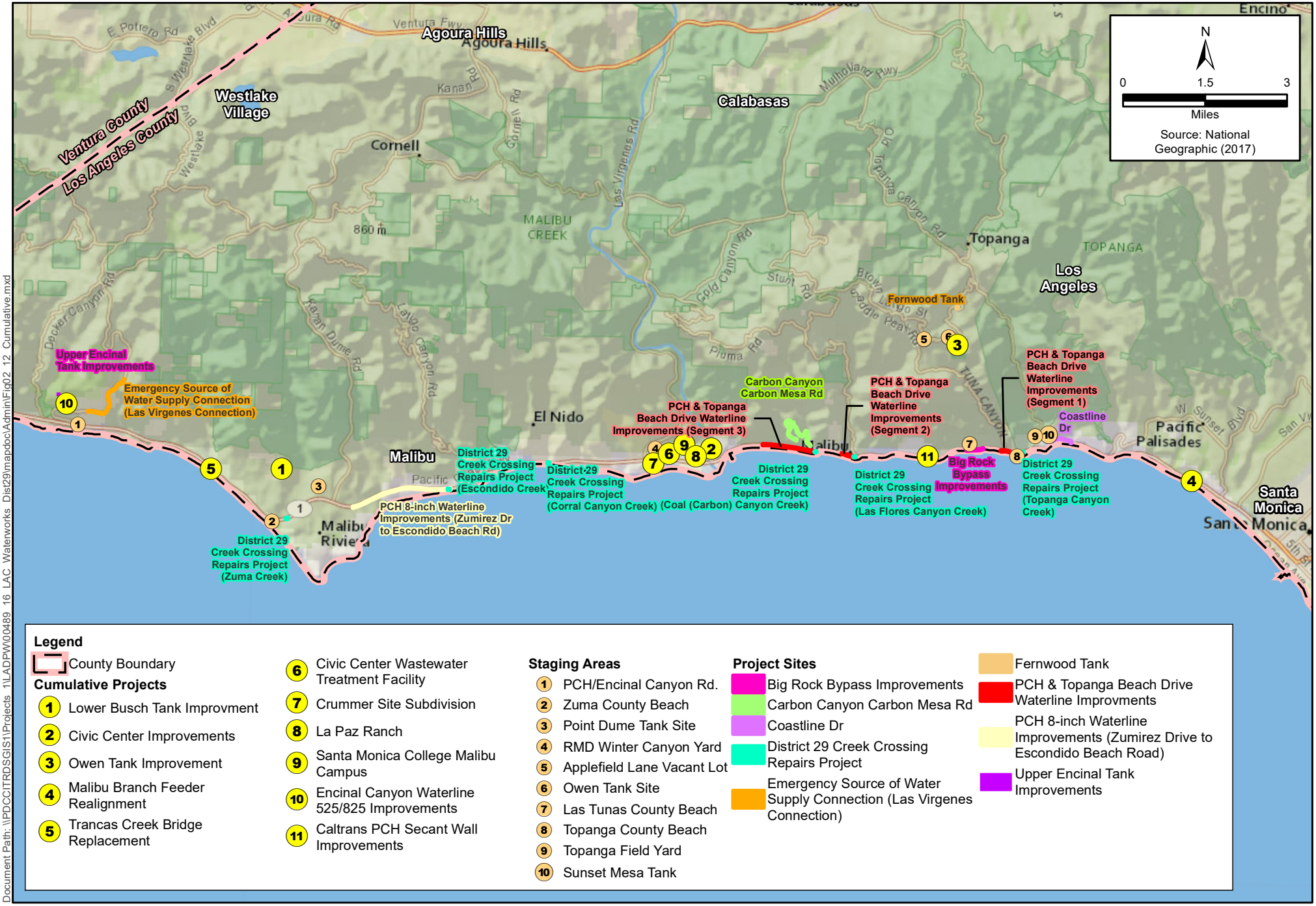

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Figure 2-12
Cumulative Impact Analysis Projects
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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2.7 Responsible Agencies and Project Approvals

Table 2-5 lists the anticipated permits required for the proposed project. The need for these permits will be verified through agency correspondence during the CEQA process.

Table 2-5. Responsible Agencies and Required Permits or Other Approvals for the Proposed Project

Agency	Permit or Approval
Federal	
U.S. Army Corps of Engineers	Clean Water Act Section 404 permits for discharge of fill into waters of the U.S., if applicable to stream crossings
State	
California Department of Fish and Wildlife	Section 1602 Lake or Streambed Alteration Agreement, if applicable to stream crossings
Caltrans District 7	Encroachment permits for PCH Permits for transportation of heavy construction equipment and materials that require use of oversized-transport vehicles on state highways
State Water Resources Control Board	National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction and Land Disturbance Activities
California Regional Water Quality Control Board, Los Angeles Region	Clean Water Act Section 401 Water Quality Certifications NPDES Permit/Waste Discharge Requirements for construction dewatering, if needed
California Coastal Commission	Coastal Zone Regulation Section 13.20.064(C) Exemption for repair, replacement, and minor alterations of existing public water infrastructure
Regional	
South Coast Air Quality Management District (SCAQMD)	Permits for temporary electric generation at construction sites, if applicable Compliance with Rule 403 (dust control) during construction activities
County of Los Angeles	
Los Angeles County Public Works Flood Control District	Encroachment permits for work within ROWs, easements, or facilities, if necessary
Los Angeles County Fire Department	In Very High Fire Hazard Severity Zones (“Fire Zone 4”), Fire Department Permit if grading permit necessary. In Fire Zone 4, permit/approval to comply with spark arrester requirements for construction equipment
Los Angeles County Environmental Health Hazardous Material Management Division	Local Certified Unified Program Agency for review of plans related to use and storage of hazardous materials and emergency management, if required
City of Malibu	
City of Malibu	Encroachment permits for construction in City streets

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Chapter 3
Environmental Analysis

3.1 Aesthetics

This section addresses the existing visual characteristics of the District 29 project area and its surroundings and evaluates the significance of changes in the visual character that would result from the proposed project.

3.1.1 Environmental Setting

The District 29 project is located in southwestern Los Angeles County, including the city of Malibu and unincorporated areas in Los Angeles County. The project area is bordered by the Pacific Ocean on the south and the Santa Monica Mountains (SMM) on the north, with very little flat land between these features. The mountains drain southward via numerous creeks in canyons and drainages, the largest of which are Malibu Creek and Topanga Creek. The mountain vegetation is composed of coastal sage scrub, chaparral, and oak woodland communities, as well as limited riparian vegetation communities. The Malibu, Dume, and Topanga lagoons have formed at the mouth of the creeks. Numerous beaches line the coast, below bluffs that represent the eroding footprint of the SMM.

The built environment in the project area is concentrated on the narrow coastal plain between the mountains and the ocean in Malibu, with sparser development reaching into the canyons. Pacific Coast Highway (PCH) is the backbone of this community. Although mostly residential in land use, PCH includes commercial centers serving Malibu and the surrounding areas on the south side of the mountains. The Malibu Civic Center is located north of PCH, near the center of the city.

Sweeping views of the ocean and beach characterize the area, although many of these views are from private property south of PCH. Coastal views are accessible from PCH, where there are breaks in development. There are excellent views from the cross-mountain roads, each of which follows a canyon through the mountains. Descending these scenic roads are alternating views of natural canyon areas and the ocean. There are also views of the beach, ocean, and scenic areas from public parks, and riding and hiking trails. Finally, although the beach and ocean are important scenic elements, there are also mountain and canyon views as seen looking inland from the beach and ocean (Malibu 2018).

3.1.1.1 Scenic Resources

The City of Malibu General Plan, Malibu Local Coastal Program (LCP), and Los Angeles County's SMM LCP identify scenic resources in the city and surrounding areas. Much of Malibu is designated as "areas having scenic views" in the Malibu General Plan and LCP, including areas within the District 29 project area. Other scenic resources in the project area include the Charmlee Wilderness Park vista points (Malibu General Plan/LCP) and a Significant Ridgeline crossing Saddle Peak Road. The Fernwood area includes two designated scenic resources, the Fernwood Hillside Scenic Element (SMM LCP and Malibu General Plan/LCP) and a Significant Ridgeline (SMM LCP and Malibu General Plan/LCP). Table 3.1-1 in Section 3.1.3.2, *Impacts*, identifies the portion of the study area near or visible from these resources.

3.1.1.2 Scenic Highways

The City of Malibu, Los Angeles County, and Caltrans have designated various roadways in the District 29 project study area as scenic roads, scenic routes, state-designated county scenic highways, and eligible state scenic highways. The roadways in the project area include PCH (Malibu, Los Angeles County, and Caltrans), Topanga Canyon Road (Malibu and Los Angeles County), Tuna Canyon Road (Malibu and Los Angeles County), Las Flores Canyon Road (Los Angeles County), Rambla Pacifico Street (Los Angeles County), Malibu Canyon Road (Malibu, Los Angeles County, and Caltrans), and Encinal Canyon Road (Los Angeles County). Table 3.1-1 in Section 3.1.3.2, *Impacts*, lists the specific improvements near or visible from the individual improvements study areas.

3.1.1.3 Site-Specific Existing Visual Environment

Carbon Canyon Road and Carbon Mesa Road Waterline Improvements Site

The Carbon Canyon Road and Carbon Mesa site is in a sparsely developed residential area. The roadways twist and turn through the rugged topography. Elevations in the study area range from approximately 60 to 500 feet. Along the winding route are views of the SMM to the north, especially from Carbon Canyon Road, and, in some locations, the Pacific Ocean to the south. Residences have significant landscaping, but in areas between the houses, the natural vegetation is largely intact.

Coastline Drive 12-inch Waterline Improvements Site

The Coastline Drive 12-inch Waterline Improvement site is in a steep roadway with residential development lining both sides of the street, including both single-family homes and multifamily buildings. The street climbs from 25 to 180 feet in elevation east to west, with the northern side of the road at a higher elevation than the southern side. This allows ocean views for most of the residences, which are all oriented in this direction. The roadway is lined with landscaping. Views of the ocean are available from the roadway when looking downhill (eastward). Views of the mountains are screened by large residential buildings.

District 29 Creek Crossing Repairs Sites

Short descriptions of the creek crossing repair locations are provided below. All of these sites are very small.

Topanga Canyon Creek Site

The Topanga Canyon Creek Site is at the PCH bridge over Topanga Canyon Creek; Topanga Beach is located south of the bridge. Scattered commercial uses are to the north, with naturally vegetated hillsides beside and behind the businesses. Available views are of both the ocean and mountains.

Pena Canyon Creek Site

The Pena Canyon Creek Site is at the PCH bridge over Pena Canyon Creek. South of PCH are mostly open coastline views to the south (i.e., residences just to the east) of Pena Canyon, and a few residences are to the north. Canyon and nearby hillsides are naturally vegetated. Available views are of both the ocean and mountains.

Los Flores Canyon Creek Site

The Los Flores Canyon Creek Site is at the PCH bridge over Los Flores Canyon Creek. South of PCH, the land use is mixed, with both commercial and multifamily residences on either side of the creek. The beach and ocean are nearby. On the north is the heavily vegetated canyon, bordered mostly by commercial development. Views of both the ocean and mountains are available at this location.

Coal (Carbon) Canyon Creek Site

The Coal (Carbon) Canyon Creek Site is at the PCH bridge over Coal (Carbon) Canyon Creek. Land comprises open space with naturally vegetated hillsides and a canyon to the north, just east of Los Angeles County Fire Station 70. To the south is a solid line of houses and perimeter walls blocking all views to the ocean. Views of mountains are available from this location.

Corral Canyon Creek Site

The Corral Canyon Creek Site is at the PCH bridge over Corral Canyon Creek, in an area that burned all the way to the highway during the November 2018 Woolsey Fire event. The area was covered by natural vegetation before the fire. On the south of PCH is the ocean, past a shallow beach. Just west of the creek is a restaurant that did not burn in the fire. Both ocean and mountain views are available.

Escondido Creek Site

The Escondido Creek Site is at the PCH bridge over Escondido Creek, with a shallow beach and ocean to the south and a heavily vegetated canyon to the north. On the southern side are residences east and west of the creek outlet. To the north are large homes and private recreational facilities. Views of both the ocean and mountains are available.

Zuma Creek Site

The Zuma Creek Site is at the PCH bridge over Zuma Creek, nearly hidden behind lush vegetation. This location is adjacent to the Zuma Creek access road, which loops under PCH right next to the creek. The mountains are not visible past the tall trees and dense vegetation on the northern side of PCH. Due to intervening topography, the ocean is not visible from this location, either.

Fernwood Tank Improvement Site

The Fernwood Tank Improvement Site is located in the Fernwood neighborhood on the western side of Topanga Canyon Boulevard, just south of the community of Topanga. The existing two 50,000 gallon tanks are located on a hill between Horseshoe Drive and Fernwood Pacific Drive, with residences on both sides. The site takes access from Horseshoe Drive, but the tanks themselves are more visible from Fernwood Pacific Drive (see Photos 3-1.1 and 3-1.2, below).

Photo 3.1-1 Fernwood Tanks Entrance, Horseshoe Drive View

Photo 3.1-2 Fernwood Tanks, Fernwood Pacific Drive View

The Fernwood neighborhood is a very hilly community of single-family homes, situated between Topanga Canyon Boulevard and the Fernwood Hillside, a long ridge covered with dense native vegetation. Many homes in the community have views of the hillside, but it is not visible from the roadways on either side of the existing tanks. The elevation of the tank site is approximately 1,320 feet. The site is surrounded by dense vegetation typical of the area.

PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) Site

This 8-inch waterline improvement site is along PCH, from Zumirez Drive on the west and Escondido Beach Road on the east. A relatively flat part of Malibu, this stretch of PCH is also relatively wide. Views of the mountains are available at some places, but most of this area is heavily landscaped with tall trees that often blocking mountain views. For most of this site, PCH does not border the ocean, so there are no ocean views, except at the eastern end. Land uses are usually set at some distance from PCH and include residences (both single- and multifamily and mobile home parks), commercial uses, hotels and restaurants, and churches. In some open areas, the Woolsey Fire burned right up to PCH. Elevations range from approximately 20 to 190 feet.

PCH and Topanga Beach Drive Waterline Improvements – Segment 1 Site

This segment of the PCH and Topanga Beach Drive Site is on PCH from just outside the eastern city limits of Malibu to the intersection with Tuna Canyon Road. The northern side of PCH in this segment is one big, steep hillside, covered with natural vegetation. A large slope-stabilization project has removed much of the landscape near Tuna Canyon Road, but that project generally is not visible from the roadway due to the steep slope. On the southern side is a thin strip of residential land uses between PCH and the ocean, which generally block views of the ocean. Views of the mountains are westward only, due to the steep hillside and tarped construction fencing to the north. There are small amounts of landscaping around the houses on the south side, with few trees. Elevations on PCH in this segment are 25 to 30 feet.

PCH and Topanga Beach Drive Waterline Improvements – Segment 2 Site

This segment of the PCH and Topanga Beach Drive Site is on PCH from Rambla Pacifico Street to approximately 1,100 feet westward. Similar to Segment 1, to the south of PCH, a continuous row of housing blocks views of the ocean. To the north, land use is commercial with parking lots. A small number of residential buildings lie at the western end. On the southern side are a few trees and palms around the houses, but no view of the ocean. To the north, the view of the mountains is generally obscured by development, both along PCH and on the paralleling streets on the hillside, so mountain views are limited to looking westward along PCH. Elevations on PCH in this segment are approximately 20 feet.

PCH and Topanga Beach Drive Waterline Improvements – Segment 3 Site

This segment of the PCH and Topanga Beach Drive Site is located on PCH from Carbon Canyon to approximately 5,600 feet westward. The southern side of PCH is lined with residences, with a few office buildings at the western end, that block the view of the ocean, except for a narrow coastal path near the middle of this segment. The northern side of PCH is a mix of commercial buildings, including hotels, and single-family and multifamily residential uses, with a few gaps where the natural hillside is visible. Again the buildings and the steepness of the slope prevents views of the more distant mountains, except when looking westward on PCH. This segment contains more landscaping, especially on the northern side of PCH, with a large landscaped hillside at the eastern end for approximately 1,000 feet. Elevations on PCH in this segment are approximately 20 feet.

Emergency Source of Water Supply Connection (Las Virgenes Connection) Site

The Las Virgenes Connection improvement site is on Encinal Canyon Road, in an undeveloped portion of Malibu. Most of this route is characterized by steep upward slopes of the canyon on both sides of

the road, with a few informal pullouts for views of the ocean below. The few scattered homes in the area are not visible from the road; only their gates and driveways can be seen. The views in this area mostly consist of the mixed vegetation and rocky slopes, with a few trees. The ocean is visible from the road only in a few places and at the pullouts. The SMM come in and out of view as the road climbs northward. Elevations on this portion of Encinal Canyon Road are approximately 550 feet at the southern end to 850 feet on the northern end.

Big Rock Bypass Improvements

The Big Rock Bypass improvement site is located between approximately 19562 and 19742 PCH. Through most of this area, the road is pinned between the ocean to the south and steep hillsides to the north, with netting and fences in some places to protect travelers from eroding rocks and soil. A few houses are located at the eastern end of this improvement site, blocking views of the ocean. On the northern side are also a few houses, although most of these are not visible from the roadway due to the steep topography. The ocean is visible to the south for about two-thirds of the site, very close to the road, separated only by a shallow rocky beach. Looking northward, one can only see the rocky slopes; the mountains are not visible due to these slopes. Vegetation is sparse in this rocky area, except for a small area near the middle of this stretch around the residences. Elevations on PCH are about 25 feet.

Upper Encinal Tank Improvement

The Upper Encinal Tank Improvement Site is located on the lower part (furthest south) of a ridgeline stretching from the coastline northward to approximately Decker Road, roughly paralleling the north/south extent of Encinal Canyon Road (approximately 1 mile east of the site) and Decker Road (approximately 0.4 mile west of the site). The ridgeline reaches over 1,500 feet in elevation. The existing 70,000-gallon tank is at 825 feet in elevation. The nearest residences are approximately 430 feet to the south, but they do not have views of the improvement site or the tanks because of intervening topography. (Of the half-dozen houses in this area, only half survived the 2018 Woolsey Fire; others have not been rebuilt as of 2020.) The existing tank is visible from a short portion of Decker Edison Road, approximately 2,000 feet to the west, but the few houses along this roadway are also screened from view by intervening topography. The improvement site is surrounded by areas of only low vegetation, with a few sparse trees and shrubs, as well as fire-damaged hillsides. The site is not visible from Charmlee County Regional Park or Charmlee Wilderness Park to the north (approximately 0.6 mile and 1.2 miles away, respectively) due to intervening topography.

Construction Staging Areas

Construction staging would occur at various locations in the construction staging areas. These sites are briefly described below.

- **Topanga Field Yard**: An existing maintenance yard along Topanga Canyon Boulevard, approximately 1000 feet north of PCH. It is visible from PCH, but not from any other land use.
- **Topanga County Beach**: The Topanga County Beach parking lot along PCH, an asphalted lot with public views from PCH and the beach, as well as the commercial land uses along this portion of PCH.
- **Sunset Mesa Tank**: An existing District 29 tank site in a residential neighborhood, well screened from public view by perimeter walls and landscaping, although private views are available from

the backyards of a few homes adjacent to the site. This site is located off Castlerock Road, approximately 500 feet north of Coastline Drive in Malibu.

- **Zuma County Beach**: The Zuma Beach parking lot along PCH, a large asphalted lot with has public views from PCH and the beach, along with private views from the back of a few homes on the top of the bluff overlooking the site.
- **Las Tunas County Beach**: The dirt parking lot for Las Tunas Beach, a small rocky beach next to Las Tunas Canyon Creek and PCH. This site has public views from PCH and the beach, along with private views from a few residences at the end of the beach and on the hillside above.
- **Applefield Lane Vacant Lot**: A vacant dirt and grass-covered lot along Saddle Peak Road near the Fernwood community. Public views are from Saddle Peak Road. A few homes in the area might have private views of the site.
- **Owen Tank Site**: An existing District 29 tank site along South Tuna Canyon Road, near the Fernwood community. Public views are from South Tuna Canyon Road; there are a few private views from surrounding residences.
- **Point Dume Tank Site**: An existing District 29 tank site along Gayton Place. The yard for this tank is barely visible from Gayton Place because of the entrance drive and landscaping. The site is approximately 1,000 feet north of PCH, but not visible from the highway due to intervening topography and a landscape nursery. A few residential homes can be viewed from the site.
- **Road Maintenance Division** (RMD) **Winter Canyon Yard**: An existing County RMD yard beside Civic Center Way, accessed from Winter Canyon Road in the Malibu Civic Center area. It is screened from view from Civic Center Way due to landscaping, but is viewable from Winter Canyon Yard. It can also be seen from a community center across the street on Winter Canyon Road, which includes recreational fields. To the north are a public school and a private school, but views of the yard are screened by buildings and landscaping.
- **Northwest Intersection of Encinal Canyon Road and PCH**: A vacant grass-covered lot. The site has public views from PCH, but the views from Encinal Canyon Road are partially blocked due to the more elevated location of the lot. Private views are available from the hillside homes above the lot and residences across PCH.

3.1.2 Regulatory Setting

3.1.2.1 Federal

There are no applicable federal regulations that address aesthetics.

3.1.2.2 State

State Scenic Highway Program

Caltrans manages the State Scenic Highway Program, provides guidance, and assists local government agencies, community organizations, and citizens with the process for officially designating scenic highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. These highways are identified in Senate Bill (SB) 1467, Section 263 of the Streets and Highways Code. PCH is a state-designated scenic

highway, and Malibu Canyon Road is an eligible state scenic highway in the Caltrans Scenic Highway Mapping System.

California Coastal Act of 1976

The California Coastal Commission predates the California Coastal Act, having been established by voter initiative in 1972 (Proposition 20), which gave it authority for 4 years. The California Coastal Act of 1976 extended the Coastal Commission's authority indefinitely. The state authority controls construction along the state's 1,100 miles of shoreline.

The Coastal Commission is the primary agency that issues Coastal Development Permits. However, once a local agency (e.g., a county, city, or port) has an LCP that has been certified by the Coastal Commission, that agency takes over the responsibility for issuing Coastal Development Permits. For areas with Certified LCPs, the Coastal Commission does not issue Coastal Development Permits, except in certain areas where the Commission retains jurisdiction (i.e., public trust lands) and is instead responsible for reviewing amendments to a local agency's LCP or reviewing Coastal Development Permits issued by local agencies that have been appealed to the Coastal Commission.

Section 30251 of the California Coastal Act addresses the protection of views from public areas (but not from private residences). Section 30251 includes the following policy.

> The scenic and visual qualities of coastal areas must be considered and protected as a resource of public importance. Permitted development must be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government must be subordinate to the character of its setting.

Most of the District 29 improvement sites are covered by one of two LCPs, the SMM LCP or the Malibu General Plan/LCP (see descriptions below).

3.1.2.3 Local and Regional

SMM Local Coastal Program

The SMM LCP was originally certified by the California Coastal Commission on October 10, 2014, with amendments certified on February 9, 2018. The LCP designates scenic resource features as follows. The scenic resource features that are near or in view of the District 20 project improvements are shown in Table 3.1-1, in the *Impacts* portion of Section 3.1.3, *Impacts and Mitigation*.

- **Scenic Elements**: Scenic Elements are designated areas that contain exceptionally scenic features unique not only to the SMM, but to the Los Angeles County region. These areas are characterized by rare or unique geologic formations, such as large rock outcroppings and sheer canyon walls, as well as coastline viewsheds, undisturbed hillsides and/or riparian or woodland habitat with intact locally indigenous vegetation and plant communities. The Fernwood Hillside, west of the Fernwood Tank Improvement Site is designated a scenic element in the SMM LCP.
- **Significant Ridgelines**: Ridgelines are defined as the line formed by the meeting of the tops of sloping surfaces of land. In general, Significant Ridgelines are highly visible and dominate the landscape. Significant Ridgelines were selected based upon one or more of the following criteria:

- **Topographic complexity**: Ridges that have a significant difference in elevation from the valley or canyon floor, such as in Malibu Canyon.
- **Near/far contrast**: Ridges that are a part of a scene that includes a prominent landform in the foreground and a major backdrop ridge with an unbroken skyline, such as in Las Flores Canyon.
- **Cultural landmarks**: Ridges that frame views of well-known locations, structures or other places that are considered points of interest in the Coastal Zone, such as Castro Peak and Turtle Rock.
- **Uniqueness and character of a specific location**: Peaks and their adjoining ridges, such as Saddle Peak.
- **Existing community boundaries and gateways**: Ridges and surrounding terrain that separate communities and provide the first view of predominantly natural, undeveloped land as a traveler emerges from the urban landscape, such as the ridgelines surrounding the Monte Nido area.
- **Overall integrity**: Ridges that comprise a significant component of a pristine, undeveloped mountain system and are viewable from a public place, such as those surrounding Arroyo Sequit.

The Fernwood Hillside and Saddle Peak Road are designated as significant ridgelines in the SMM LCP.

- **Scenic Routes**: Scenic routes are selected for the unique natural aesthetic qualities that can be experienced as one drives along them. Scenic Routes also include County Scenic Highways. The selected routes pass along wide swaths of undisturbed habitat, offer views of dramatic geologic or coastal formations, pass by rolling hills studded with oaks, and wind past areas rich with riparian vegetation. County Scenic Highways are recognized by the State as possessing aesthetic qualities of statewide importance and are marked with the familiar poppy signs. PCH, Topanga Canyon Road, Tuna Canyon Road, Las Flores Canyon Road, Rambla Pacifico Street, Malibu Canyon Road, Encinal Canyon Road, and Saddle Peak Road are designated as scenic routes in the SMM LCP.

  Although only significant scenic resource features are identified on the Scenic Resources map, other scenic resources in the SMM of regional and national importance are to be protected. These include places on, along, within, or visible from scenic routes, public parklands, trails, beaches, and state waters that offer scenic vistas of the mountains, canyons, coastline, beach, and other unique natural features.

The following goals and policies from the SMM LCP are applicable to the proposed project:

- **Goal CO-5**: Retain the scenic beauty of the plan area by considering and protecting its scenic and visual qualities as a resource of public importance.
- **Policy CO-124**: The SMM contain scenic resources of regional and national importance. The scenic and visual qualities of these resources must be protected and, where feasible, enhanced.
- **Policy CO-125**: Protect public views within Scenic Areas and throughout the Coastal Zone. Places on, along, within, or visible from Scenic Routes, public parklands, public trails, beaches, and state waters that offer scenic vistas of the mountains, canyons, coastline, beaches, and other unique natural features are considered Scenic Resource Areas. Scenic Resource Areas do not include

areas that are largely developed, such as existing, predominantly built-out residential subdivisions. Scenic Resource Areas also include the scenic resources identified on Map 3 and consist of Scenic Elements, Significant Ridgelines, and Scenic Routes. In addition to the resources identified, the public parkland and recreation areas identified are also considered Scenic Resource Areas.

- **Policy CO-126**: Maintain and enhance the quality of the vistas along identified Scenic Routes (Table 3.1-1 lists the applicable Scenic Routes).
- **Policy CO-127**: Protect public views of designated Scenic Elements and Significant Ridgelines, the ocean, and beaches. The viewshed and line-of-sight to these scenic resources must also be preserved and protected.
- **Policy CO-141**: Limit and design exterior lighting to preserve the visibility of the natural night sky and stars, to the extent feasible and consistent with public safety. Los Angeles County will periodically update the Local Implementation Plan (LIP)'s Dark Skies requirements to ensure that they are consistent with the most current Dark Skies science, technology, and best practices in the field, beginning 5 years after the LCP's certification date.
- **Policy CO-142**: Maintain dark skies in the Coastal Zone by reducing light pollution and requiring best available Dark Skies technology in all permitted lighting and complying with Dark Skies principles and best practices to the maximum extent feasible. Only very limited night lighting for equestrian facilities must be allowed.
- **Policy CO-144**: New development must incorporate colors and exterior materials that are compatible with the surrounding landscape. The use of highly-reflective materials must be prohibited, with the exception of solar panels.
- **Policy CO-147**: Limit the height of structures above existing grade to minimize impacts to visual resources. Within scenic areas, the maximum allowable height must be 18 feet above existing or finished grade, whichever is lower. Chimneys, rooftop solar equipment, and non-visually obstructing rooftop antennas may be permitted to extend above the allowable height of the structure, but must not extend more than 6 feet above the maximum allowable height.

Malibu Local Coastal Program/Malibu General Plan

The entire city of Malibu is located within the California coastal zone, which means that all development and activity occurring within city limits (unless considered exempt) is subject to the regulations of the City's LCP. LCPs contain the ground rules for protecting sensitive coastal resources, public access along the entire coastline of California, and scenic and visual resources. Functioning similar to the City's General Plan and Zoning Code (Title 17 of the Municipal Code), the City's LCP regulates zoning and land use. The primary difference is that the LCP is an extension of State law (i.e., California Coastal Act) implemented at the local level. As a result, the policies and regulations of the LCP supersede any policy or regulation of the City's General Plan or Zoning Code in the event there is a conflict between the documents. Zoning is administered through the LCP LIP, and land use is administered through the LCP Land Use Plan (LUP). Combined, the two documents constitute the City's LCP. All improvements sites in the City of Malibu are within the City's General Plan/LCP.

Chapter 6 of the LUP covers scenic and visual resources, including following applicable policies:

- **LUP Policy 6.1**: The SMM, including the City, contain scenic areas of regional and national importance. The scenic and visual qualities of these areas must be protected and, where feasible,

enhanced. See Table 3.1-1, in Section 3.1.3.2, *Impacts,* for a list of applicable roadways. All improvement sites those in the unincorporated portions of Los Angeles County are mapped as areas having scenic views in the Malibu General Plan/LCP. Charmlee Park has designated vista points in the Malibu General Plan/LCP.

- **LUP Policy 6.2**: Places on and along public roads, trails, parklands, and beaches that offer scenic vistas are considered public viewing areas. Existing public roads where there are views of the ocean and other scenic areas are considered Scenic Roads. See Table 3.1-1 in Section 3.1.3.2, *Impacts*, for a list of applicable roadways.
- **LUP Policy 6.3**: Roadways traversing or providing views of areas of outstanding scenic quality, containing striking views of natural vegetation, geology, and other unique natural features, including the ocean must be considered Scenic Roads. See Table 3.1-1 in Section 3.1.3.2, *Impacts*, for a list of applicable roadways.
- **LUP Policy 6.33**: The Pacific Coast Highway corridor must be protected as a scenic highway and significant viewshed.

Malibu General Plan Conservation Element

The Malibu General Plan's Conservation Element defines scenic resources as natural features of the landscape that exhibit a high scenic value. These resources include landforms, vegetation, and water forms that are relatively distinct from the general landscape found throughout the coastal zone. They provide visual enhancement and pleasure and are worthy of preservation for aesthetic, historical, topographical, cultural, or biological reasons.

The general plan identifies 22 scenic resources in the city and surrounding areas in the Malibu LCP. The ones within or visible from the District 29 project study area are discussed in the Section 3.1.4, *Environmental Setting*.

The Land Use Element of the Malibu General Plan includes the following applicable goals, objectives, policies, and implementation measures:

- **LU Goal 1**: The natural and environmental resources of Malibu are protected and enhanced (applicable to all improvement sites and staging areas in the City of Malibu).
- **LU Objective 1.1**: Development does not degrade the environment (applicable to tank improvements).
- **LU Implementation Measure 9**: Requires that development not interfere with public and private views and view corridors to the greatest extent feasible (applicable to tank improvements).
- **LU Implementation Measure 10**: Locate development to minimize vegetation clearance, consequent soil erosion, and adverse impacts on wildlife and visual resources by clustering development near existing roads on areas of relatively gentle slopes, as far as feasible outside of riparian areas in canyons, and outside areas that serve as primary wildlife corridors (applicable to tank improvements).
- **LU Objective 1.4**: Development consistent with the preservation of the natural topography and viewshed protection (applicable to tank improvements).
- **LU Implementation Measure 28**: Site and design development to protect public views from scenic roadways to and along the shoreline and to scenic coastal areas, including public parklands (applicable to tank improvements).

3.1.3 Impacts and Mitigation

3.1.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below:

- Substantial adverse effect on a scenic vista.
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway.
- In non-urbanized areas, substantial degradation of the existing visual character or quality of public views, from a publicly accessible vantage point, of the site and its surroundings. In urbanized areas, a conflict(s) with the applicable zoning and other regulations governing scenic quality.
- Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.1.3.2 Impacts

The Malibu General Plan and Los Angeles County's SMM LCP identify scenic resources near or visible from District 29 project improvement locations, as identified in Table 3.1-1.

Table 3.1-1. Scenic Resources near District 29 Project Improvements

Scenic Resource	Document	Improvement
PCH – Scenic Route	SMM LCP	PCH and Topanga Beach Drive Waterline Improvements, Segments 1, 2, 3 Creek Crossing Repairs, all Big Rock Bypass Improvements PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) Zuma County Beach Staging Area Las Tuna County Beach Staging Area Topanga County Beach Staging Area
PCH – State-designated County Scenic Highway	SMM LCP Caltrans Scenic Highway Mapping System	
PCH – Eligible State Scenic Highway	Caltrans Scenic Highway Mapping System	
PCH – Scenic Road	Malibu General Plan/LCP	
Areas Having Scenic Views	Malibu General Plan/LCP	All improvements except Fernwood Tank, Applefield Lane Vacant Lot Staging Area, Owen Tank Site Staging Area, and Coastline Drive
Topanga Canyon Road Scenic Route/Road	SMM LCP Malibu General Plan/LCP	Topanga Field Yard
Tuna Canyon Road Scenic Route/Road	SMM LCP Malibu General Plan/LCP	PCH and Topanga Beach Drive Waterline Improvements, Segment 1
Las Flores Canyon Road Scenic Route	SMM LCP	Creek Crossing Repairs, Las Flores Canyon Creek
Rambla Pacifico Street Scenic Route	SMM LCP	PCH and Topanga Beach Drive Waterline Improvements, Segment 2
Malibu Canyon Road – State-designated County Scenic Highway	SMM LCP Caltrans Scenic Highway Mapping System	RWD Winter Canyon Yard Staging Area

Scenic Resource	Document	Improvement
Malibu Canyon Road – Eligible State Scenic Highway	Caltrans Scenic Highway Mapping System	
Malibu Canyon Road – Scenic Road	Malibu General Plan/LCP	
Encinal Canyon Road Scenic Route	SMM LCP	Emergency Source of Water Supply Connection (Las Virgenes Connection), Upper Encinal Tank
Charmlee Park Vista Points	Malibu General Plan/LCP	Emergency Source of Water Supply Connection (Las Virgenes Connection), Upper Encinal Tank
Fernwood Hillside Scenic Element and Significant Ridgeline	SMM LCP	Fernwood Tank Improvement
Saddle Peak Road Scenic Route/ Road and Significant Ridgeline	SMM LCP Malibu General Plan/LCP	Applefield Lane Vacant Lot Staging Area Owen Tank Site Staging Area (ridgeline only)

Source: Malibu 2016, Los Angeles County 2013, Caltrans 2015, Caltrans 2019

Impact AES-I.a.

Would the project have a substantial adverse effect on a scenic vista?

Less than significant.

Construction

Construction within PCH

Within the project study areas along PCH are a number of formal or informal vista points, such as roadway turnouts, beach parking lots, and coastal access points. None of these are officially designated scenic vistas. Views from the ocean side of PCH are primarily toward the ocean, not across PCH toward the hillsides and development. Construction within PCH would go quickly, only for a few days at any one location. Therefore, construction in PCH involving underground pipeline replacement and pipeline repair under bridges would not affect scenic vistas for the following improvement: the District 29 Creek Crossing Repairs, the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), the PCH and Topanga Beach Drive Waterline Improvements, and the Big Rock Bypass Improvements.

Construction Staging at Beach Parking Lots

Beach parking lots may be used as optional staging areas. At the Topanga County Beach staging area, views of the beach from PCH are not available because of topography and vegetation, although partial views of the ocean can be seen between the trees. Uses inland of PCH are commercial, including a small, cottage-style motel, set back from PCH by a large parking lot, and a seafood market and restaurant. Although both of these issues have a few windows facing the ocean, the construction staging would only use a portion of the parking lot and be similar in scale and height to the existing parking in the parking lots and the heavy traffic on PCH, including large trucks. A few pieces of construction equipment occasionally may be stored at the staging area, but most of the view of the ocean would be preserved during the time that the lot is used for staging. Traffic along PCH viewing the ocean would be similarly affected, with only a slight interruption in the view when large

equipment is present. Therefore, impacts on scenic vistas at this staging area would be less than significant.

At the Las Tunas County Beach staging area, most or all of the parking area would be used. However, on either side of the parking lot are pullouts and on-street parking on the southern side of PCH that would provide ocean views. Across PCH, a few residences have views, but these are on a bluff, 45 feet or more above the PCH elevation, so their view of the beach and ocean would not be blocked. Therefore, impacts on scenic vistas at this staging area would be less than significant.

At the Zuma Beach staging area, a small portion of a very long parking lot (approximately 1.5 miles) would be used for staging. The staging uses would be similar to the parking areas to a passing motorist and would only briefly interrupt the view of the beach and ocean that are available over this 1.5-mile stretch. On the inland side of PCH are bluff-top homes at least 25 feet above the parking lot elevation, so these residential views would not be block by the construction staging uses. Therefore, impacts on scenic vistas at this staging area would be less than significant.

Construction of Tanks and Nearby Staging Areas

The Fernwood Tank improvement is in an area designated by Malibu for scenic views. There are not any scenic views near the improvement site because of the topography and vegetation that block such views. The Fernwood Hillside scenic element designated by both Los Angeles County and Malibu is near this improvement site, but blocked from view by intervening topography and vegetation. Los Angeles County also has a designated significant ridgeline within the Fernwood Hillside that will likewise not be affected by the Fernwood Tank construction due to intervening topography and vegetation. Only the two adjacent residences can view the site from their property, with other residences screened by intervening topography and vegetation. Views from Horseshoe Drive and Fernwood Pacific Drive, on either side of the tank property, are only from where the roads are directly adjacent to the tank site. Construction and construction equipment would therefore only be visible to a small number of individuals. Haul trucks would be visible as they arrive and depart for short periods of time, which would be visible to a slightly larger number of residential viewers and travelers on Horseshoe Drive. Therefore, due to the extremely hilly terrain, dense vegetation, and short vistas, the impacts of construction of the new Fernwood Tank on scenic vistas would be less than significant.

The nearby Applefield Lane Vacant Lot and Owen Tank Site construction staging areas are also near this area. Another significant ridgeline generally runs parallel to Saddle Peak Road and Tuna Canyon Road in this area. However, the construction staging areas would have minimal impacts if any on views of the ridgeline because there is limited, if any, ability to view across these sites due to topography. Impacts to views of the ridgeline or the Fernwood Hillside from or across the staging areas would be less than significant.

Construction of the Upper Encinal Tank would have minimal or less impacts to scenic vistas because it is not visible from most surrounding areas, only from a small portion of Decker Edison Road, approximately 2,000 feet away. Decker Edison Road is a very low-volume roadway, serving approximately five residences (one of which was lost in the 2018 Woolsey Fire), none of which have views of the Upper Encinal Tank site due to topography. Because of the distance and lack of other viewers, construction on the Upper Encinal Tank site would have less-than-significant impacts on scenic vistas.

Other Construction Sites

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvement would include construction within existing street rights-of-way. The two streets affected serve rural residential areas, with most homes set well back from the roadway and/or screened by topography or vegetation. Therefore, views of construction would be primarily from the traffic on the street. This construction would move quickly, similar to that described for PCH, so impacts to scenic vistas would be less than significant.

The Coastline Drive 12-inch Waterline Improvement is located within a residential street. On the northern side of the road are mostly multifamily residences, located on a bluff at least 20 feet above the construction site. Two single-family residences on the northern side of the road, at the western end of the construction site, are about 10 feet above the roadway. One is set back from the roadway, with only one side of the pool deck having views of the roadway, partially screened by vegetation. The other, at the very end of the construction, is mostly screened from view by vegetation. On the southern side of Coastline Drive are single-family residences on another bluff that are oriented toward the south for the views of the ocean. Few, if any, of them have windows viewing the street. Therefore, views of construction would be primarily from the traffic on the street. This construction would move quickly, similar to that described for PCH, so impacts to scenic vistas would be less than significant.

The Emergency Source of Water Supply Connection improvement would be located near Charmlee Wilderness Park vista points, designated by Malibu, but would not be visible from this scenic resource due to intervening topography. There would be no impact to these vista points. Construction along Encinal Canyon Road for this improvement would involve short periods of construction (a few days) in any one location. No land uses along this road have views of the roadway due to topography; the scattered residences are set well back from the roadway. Only travelers on Encinal Canyon Road would be affected by the construction. Because this would be a very short period of time for the viewers passing by the construction site, less-than-significant impacts on scenic vistas would occur during construction of the improvement.

Other Staging Areas

The Topanga Field Yard is existing maintenance yard along Topanga Canyon Boulevard, approximately 1,000 feet north of PCH. It is visible from PCH, but not any other land use. Similarly, the RMD Winter Canyon Yard is an existing County maintenance yard visible from Winter Canyon Yard. It can also be seen from a community center across the street on Winter Canyon Road, which includes recreational fields. To the north are a public school and a private school, but views of the yard are screened by buildings and landscaping. The use of the sites for construction staging would be very similar to its use as a maintenance yard, which often includes storing equipment and materials for routine maintenance. Therefore, because the construction staging use would be similar to the existing uses, impacts to scenic vistas would be less than significant.

The Sunset Mesa Tank staging area is an existing District 29 tank site in a residential neighborhood, well screened from public view by perimeter walls and landscaping, although there are private views from the backyards of a few homes adjacent to the site. Similarly, the Point Dume Tank staging area is barely visible from off site, and only the entrance drive and landscaping is visible to the public from Gayton Place. A few residential homes have views of the site from the edges of their properties. Because the existing uses are a District 29 tank sites, and because it is not uncommon for equipment and supplies used for maintenance to be stored at these sites, the use for construction staging would be very similar to the existing uses, and impacts to scenic vistas would be less than significant.

The Northwest Intersection of Encinal Canyon Road and PCH staging area is on a vacant grass covered lot. The site's primary use is open space, which is mowed periodically to reduce fire fuel, although it has occasional been used for material storage in the past. The site has public views from PCH, but the views from Encinal Canyon Road are partially blocked due to the more elevated location of the lot. The residences north of the site, across Encinal Canyon Road, are approximately 20 feet above the site, so their views of the ocean would not be blocked by construction staging on the site. The views of the site from residences south of PCH are blocked by dense landscaping on their properties. Viewers westbound on PCH would have a momentary view of construction staging at the site when directly adjacent to it, due to the roadway alignment and landscaping just east of the site. Viewers eastbound on PCH would have slightly longer views due to the openness of the view on their left. However, to some extent the view would blend into the large-scale development just past the site, at least until the motorists are very close. At the relative high speeds on this part of PCH, the view would be momentary and the impacts on scenic vistas would be less than significant.

Operation

Once construction is complete, there would be no impact to scenic vistas resulting from in-street underground pipeline improvements because the pipelines would be buried or under bridges and not visible. The built-out views of the Fernwood Tank and Upper Encinal Tank would be nearly the same as the existing views. The replaced single tank at Fernwood would be similar in height and width to the two existing tanks and visible to the same few viewers. The Upper Encinal Tank can only be viewed from a distance of 2,000 feet from a very low-volume roadway. At this distance, the larger replacement tank would still be barely noticeable in the distance. The construction staging areas would be returned to their existing condition, or better. Therefore, impacts to scenic vistas from operation of the District 29 improvements would be less than significant.

Impact AES-I.b.

Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?

Less than significant.

Although some of the District 29 improvements and staging areas are located near state scenic highways, no scenic resources would be damaged, including, but not limited to trees, rock outcropping, and historic buildings.

Construction

Construction within PCH

PCH is a state-designated county scenic highway. Construction in this highway involving underground pipeline replacement and pipeline repair under bridges for the following District 29 improvements: the District 29 Creek Crossing Repairs, the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), the PCH and Topanga Beach Drive Waterline Improvements, and the Big Rock Bypass Improvements. Construction would have temporary visual impacts to PCH. However, this construction would not damage any trees, rock outcroppings, or historical buildings (as discussed above). Construction impacts would occur over a short time for only a few days at any one location. Therefore, construction impacts to scenic resources in within the view of a state scenic highway would be less than significant.

The following improvements would affect roadways that intersect with PCH: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-Inch Waterline Improvements, and Emergency Source of Water Supply Connection (Las Virgenes Connection). These improvements would not affect any trees, rock outcroppings, or historical buildings visible from the PCH because all construction would be within the right-of-way of the intersecting roads. Therefore, impacts to the view of a state scenic highway would be less than significant.

The Topanga Field Yard is existing maintenance yard along Topanga Canyon Boulevard, approximately 1,000 feet north of PCH, from which it is visible. However, the use of the site for construction staging would be virtually the same as its existing use as a maintenance yard. The proposed use of the site would not affect any trees, rock outcroppings, or historic buildings. Therefore, the Topanga Field Yard staging area would have less-than-significant impacts to state scenic highways.

The following other construction staging areas would be located adjacent to PCH and visible from this scenic highway: Topanga County Beach, Las Tunas County Beach, and Zuma County Beach. The use of these parking lots does not affect any trees, rock outcroppings, or historic buildings. Therefore, their impacts related to views of PCH would be less than significant.

The Northwest Intersection of Encinal Canyon Road and PCH staging area is adjacent to PCH. No trees, rock outcroppings, or historic buildings are on or near the site. Views of the site from PCH are limited, as describe in Impact AES-I.a. Therefore, impacts related to views of PCH at this location would be less than significant.

Construction near Malibu Canyon Road

Malibu Canyon Road is eligible for designation as a state scenic highway. The RMD Winter Canyon Yard, which would be used for construction staging, is adjacent to Malibu Canyon Road, but is screened from view by topography and landscaping, and its entrance is from Winter Canyon Road, not Malibu Canyon Road. Because the construction-staging site is not visible from this eligible state scenic highway, and because the use of the site for staging would not remove any of the intervening topography or vegetation, the RMD Winter Canyon Yard would have no impacts to scenic resources within the view of an eligible state scenic highway.

Construction within or near Locally Designated Scenic Routes/Roads

Topanga Canyon Road is designated by both Los Angeles County and Malibu as a scenic route (County) or scenic road (Malibu). Impacts of the Topanga Field Yard construction staging area would be the same as discussed for state scenic highways, above, and would be less than significant.

Tuna Canyon Road is designated by both Los Angeles County and Malibu as a scenic route (County) or scenic road (Malibu). The PCH and Topanga Beach Drive Water Waterline Replacement (Segment 1), would cross the southern terminus of Tuna Canyon Road in PCH. Construction of this improvement would result in less-than-significant impacts to views from Tuna Canyon Road because PCH is only visible for the southernmost approximate 300 feet, construction visible from Tuna Canyon Road is only expected to last for a few days, and the improvement would not damage any trees, rock outcroppings, or historical buildings (work would only be in the PCH right-of-way).

Las Flores Canyon Road is designated as a scenic route by Los Angeles County. The repairs to the Los Flores Canyon Creek pipeline, attached to the PCH bridge just east of the southern terminus of Las Flores Canyon Road, would not result in damage to any trees, rock outcroppings, or historical

buildings in this location (work would only be in the PCH right-of-way). Construction of creek crossings is precluded from any damage to vegetation. Impact would be less than significant.

Rambla Pacifico Street is designated by Los Angeles County as a scenic route. The PCH and Topanga Beach Drive Water Waterline Replacement (Segment 2), would cross the southern terminus of Rambla Pacifico Street in PCH. Construction of this improvement would result in less-than-significant impacts to views from Rambla Pacifico Street because views of PCH are very narrow due to the street configurations, construction visible from Rambla Pacifico Street is only expected to last for a few days, and the improvement would not damage any trees, rock outcroppings, or historical buildings (work would only be in the PCH right-of-way).

Encinal Canyon Road is designated a scenic route by Los Angeles County. The construction of the Emergency Source of Water Supply Connection would result in temporary visual impacts to the roadway itself, but would not affect any trees, rock outcroppings, or historical buildings because all work would be in the existing right-of-way. Construction along Encinal Canyon Road for this improvement would involve short periods of construction (a few days) in any one location. Therefore, impacts to locally designated scenic routes/roads would be less than significant. The Northwest Intersection of Encinal Canyon Road and PCH construction staging area also would be adjacent to Encinal Canyon Road, but the view from this roadway would be limited due to topography. It would also have less-than significant impacts.

Saddle Peak Road is designated as a scenic route by Los Angeles County and a scenic road by Malibu. The Applefield Lane Vacant Lot construction staging area is located adjacent to this roadway. Saddle Peak Road would not be permanently damaged, nor would any trees, rock outcroppings, or historical buildings. Views across the construction staging area would not obstruct any vistas (as discussed for Impact AES-I.a, above). Therefore, impacts to locally designated scenic routes/roads would be less than significant.

Operation

Once construction is complete, there would be no impact to state designated or eligible highway for the following improvements located in or near these roadways because the in-street underground pipeline improvements would be buried or under bridges and not visible, and no trees, rock outcroppings, or historical buildings would be affected: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-Inch Waterline Improvements, District 29 Creek Crossing Repairs, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements, and Emergency Source of Water Supply Connection (Las Virgenes Connection).

Similarly there would be no operational impacts resulting from the following improvements located within or adjacent to locally designated scenic routes/roads: PCH and Topanga Beach Drive Water Waterline Replacement (Segments 1 and 2), District 29 Creek Crossing Repairs (Las Flores Canyon Creek), and Emergency Source of Water Supply Connection (Las Virgenes Connection).

No impacts to scenic highways would result from operation of the Fernwood or Upper Encinal Tank, which would not be visible from a scenic highway.

Construction staging areas (Topanga Field Yard, Topanga County Beach, Las Tunas County Beach, and Zuma County Beach, RMD Winter Canyon Yard, and Northwest Intersection of Encinal Canyon Road and PCH) would be returned to their existing condition or better without disturbing any trees,

outcroppings, or historical buildings; therefore, no impacts to scenic highways would result after construction is complete.

Impact AES-I.c.

Would the project 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 a 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?

Less than significant.

Construction

Non-urbanized Areas

Only the Fernwood Tank Improvement, Emergency Source of Water Supply Connection, and Upper Encinal sites are located in non-urbanized areas.

During the construction of the Fernwood Tank Improvement, which is in a semi-urbanized area, there would be temporary effects to visual character and quality for approximately 8 months during demolition and rebuilding of the tank. There are existing views onto this site from Fernwood Pacific Drive and Horseshoe Drive (see photos in Section 3.1.1.3, *Site-Specific Existing Visual Environment*), and some of the screening vegetation may be removed, but because of topography, only a small portion of the site would be visible from each of these public viewing locations. The impact to visual character and quality would be less than significant for two reasons: 1) only a limited amount of the site would be visible from public viewing points because of topography (the tank would be built on a site with an elevation higher than the adjacent roadway, limiting the views of the entire site); and 2) Los Angeles County Public Works construction Best Management Practices (BMPs) for maintaining a clean site and clean access points would be required during construction, preventing accumulation of trash and debris visible from the adjacent roadways.

The Emergency Source of Water Supply Connection would be located in an undeveloped portion of Encinal Canyon, where there are a limited number of public views and only from the roadway itself (the site is not viewable from Charmlee Wilderness Park due to intervening topography). This improvement would involve approximately 11 months of construction, which would include excavation in the Encinal Canyon Road right-of-way, stockpiling materials, installing pipelines, and repaving the roadway. The entire pipeline improvement site would not be disturbed at one time. Impacts to visual character and quality from public views would be less than significant during construction because of the temporary nature of the impacts and the limited amount of area constructed at any particular time.

The Upper Encinal Tank Improvement in an open space area, only visible from approximately 2,000 feet away from a short stretch of Decker Edison Road for approximately 400 feet. Construction on this site would be visible, but only large equipment and the larger tank would be visible at this distance. The view is dominated from this vantage point by the views of canyons, hillsides, and the ocean. The construction site is not on a horizon line (ridgetop), and it represents less than 1 percent of a typical field of view for humans (90 to 120 degrees, dependent upon individual peripheral vision capabilities). Therefore, the construction would substantially degrade visual character or quality, resulting in a less-than-significant impact

Three construction staging areas are in non-urbanized areas or just outside these areas. Topanga Field Yard is an existing maintenance yard of the edge of the urbanized area. The storage of materials and equipment at this yard would not be out of character for the existing use of the site. The optional staging areas at Applefield Lane Vacant Lot and Owen Tank Site are also located in semi-urbanized area. The only public views are from relatively low-volume roadways adjacent to the site. Both areas would be screened or partially screened from view by fencing. Use of either site would be for approximately 8 months. The construction staging area would be required to adhere to construction-site BMPs for maintaining a clean site and clean access points. Impacts to visual character and quality would be less than significant.

Urbanized Areas

Except for the improvements discussed above, all the improvements would be located in an urbanized area. Construction on these sites would be temporary and would not conflict with zoning or regulations addressing scenic quality. Underground pipeline and repair projects would be consistent with the requirements for utility work within street rights-of-way. Both tank projects would be replacing existing tanks and would be consistent with construction requirements by the local agencies. They would also adhere to County BMPs requiring a clean construction site. Therefore, impacts would be less than significant.

Construction staging areas would not affect zoning or regulations governing scenic quality because their temporary use of the site would not conflict with zoning or regulations addressing scenic quality. Some would be on existing tank sites or maintenance yards, others will utilize beach parking lots, and one would be on a vacant lot in urbanized area. Where possible, they will be screened from public view by temporary construction fencing. Construction sites will be required to adhere to BMPs related to a clean work site. Therefore, impacts would be less than significant.

Operation

For all improvements except the Fernwood Tank and Upper Encinal improvements, once construction is completed, the visual character and quality of the sites would be unchanged from the existing condition. All pipelines are located underground, and therefore invisible, or suspended from bridges similar to the existing pipelines. Construction staging areas would be cleaned up and left in their existing condition or better. Ongoing maintenance would be the same as maintenance for the existing pipes and generally carried out from manholes. Impacts to underground and creek crossing improvements and repairs related to visual character and quality would be less than significant.

Once constructed, the single Fernwood Tank would have replaced the two existing tanks in approximately the same location. The views from public areas would be similar to the existing condition. Also, biological resources mitigation would result in the replacement of trees on the site at a higher ratio, potentially providing additional screening (see Section 3.4, *Biological Resources*). Because the Fernwood Tank improvement would be similar in visual character and quality to the existing condition, impacts would be less than significant.

Once constructed, the larger Upper Encinal Tank would be visible from the one public vantage point discussed above, representing a very small change in the view (less than 1 percent). Therefore, it would result in less-than-significant impact to existing visual character and quality.

Impact AES-I.d.

Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Less than significant.

Construction

During construction, temporary lighting would be used at the construction staging areas and at any improvements construction at sites requiring nighttime work. Nighttime views can be affected by lighting, especially when the lighting is between the viewers and the view. Nighttime lighting can also spill over into residential uses, interfering with sleep. Upward lighting can also interfere with dark sky conditions, common in urban areas.

Some nighttime work is expected to be necessary, most likely along PCH, where there are adjacent residences, including District 29 Creek Crossing Repairs (Las Flores Canyon Creek, Coal [Carbon] Canyon Creek, and Escondido Creek), PCH and Topanga Beach Drive (all three segments), PCH 8-inch Waterline Improvement (Zumirez Drive to Escondido Beach Drive), and Big Rock Bypass. This would be necessary in order to avoid heavy traffic periods (hours would vary depending upon the improvement; see Section 3.18, *Transportation*). Nighttime construction sites for in-street construction would require lighting. This mobile lighting would be the minimum necessary for safety and security and temporary, lasting for only a few nights in any one location. All lighting will be directed to the location needed and shielded, both on the sides to prevent spillover into adjacent properties and on the top, to reduce impacts to views from adjacent properties at higher elevations looking down onto or over the site. Therefore, impacts would be less than significant.

Nighttime lighting at all construction staging areas, including these, would be the minimum necessary for safety and security and would be directed downwards and shielded to avoid spillover onto adjacent uses and impacts to overhead views, as described above. Therefore, impacts would be less than significant

There would be no impacts related to the creation of substantial sources of glare during construction because construction equipment and materials would not be reflective, and headlight glare would be directed on the street (as with regular traffic) or screened (by construction fencing at construction sites where necessary to protect adjacent uses).

Operation

During operation, the only sites with any lighting would be at the Fernwood Tank and Upper Encinal Tank. This lighting would be minimal, for safety and securing only, and shielded from off-site views (in this case from the sides to prevent spillover light and the top so as not to interfere with dark sky conditions). Lighting would be similar to the existing lighting on the site or potentially less impacting, due to advances in lighting technology to prevent spillover and interference with dark-sky conditions. Therefore, impacts related to nighttime views would be less than significant.

There would be no impacts related to the creation of substantial sources of glare during operation because the only aboveground improvements, Fernwood Tank and Upper Encinal Tank, would not be reflective.

3.1.3.3 Mitigation Measures

The improvements in the District 29 project would result in less-than-significant impacts to aesthetic resources. No mitigation measures are required.

3.2 Agriculture and Forestry Resources

This section describes the current agriculture and forestry environmental and regulatory setting, the potential impacts that would result from implementation of the proposed project, and mitigation measures, if necessary.

3.2.1 Environmental Setting

3.2.1.1 Agricultural Resources

Very little existing land in the Malibu area is used for agriculture. Within the city, the Malibu General Plan identifies only 24.8 acres of land referred to as Horticulture, which may include irrigated and non-irrigated cropland, improved pastureland, orchards, vineyards, nurseries, dairies, livestock, poultry, and other agriculture. Most of this land is used for orchards, vineyards, and nurseries. There are also small plots on vacant residential lots. There are no dairies, livestock, or poultry operations in or near Malibu. In its General Plan, Malibu has only designated 2 acres to Agriculture/Horticulture. However, the 2 designated acres are not shown on the Land Use Policy Map in the general plan. (City of Malibu 2017)

The California Department of Conservation's (California DOC) Farmland Mapping and Monitoring Program (FMPP) has not identified any Prime Farmland, Farmland of State Importance, Unique Farmland, or Farmland of Local Importance in the study are, including the city of Malibu and the nearby Los Angeles County land (see section 3.2.2.2, *State*, for more information about this program). A few acres of grazing land are identified in the area, but this land is not located near any of the project locations. (California DOC 2019a)

No land in Malibu or surrounding areas is covered by a Williamson Act contract (see *Williamson Act* in Section 3.2.2.2, *State*).

3.2.1.2 Forestry Resources

There are no forestry resources in Malibu or nearby Los Angeles County areas. (U.S. Department of Agriculture 2016). No lands in this area are zoned for forestry, either in Malibu or Los Angeles County. Neither Malibu nor Los Angeles County has a zoning designation for forestlands. The nearest National Forests to the Malibu area are the Angeles National Forest, approximately 18 miles northeast of Malibu, and the Los Padres National Forest, approximately 35 miles northwest of Malibu.

3.2.2 Regulatory Setting

3.2.2.1 Federal

There are no federal regulations related to agricultural or forestry resources applicable to the project.

3.2.2.2 State

Agricultural Resources

Farmland Mapping and Monitoring Program (FMMP)

The California DOC has set up the Farmland Mapping and Monitoring Program (FMMP) is required by state law to collect and acquire information about the amount of land converted to or from agricultural use and maintain the Important Farmland Series maps and an automated map and database system. FMMP is used by both CEQA and the Right to Farm disclosure law as the official source for agricultural land data (California DOC 2019c).

Under CEQA, the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land constitute "agricultural land." These categories are described below:

- **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance:** Farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland:** Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance:** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land:** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities (California DOC 2019b).

Williamson Act

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open-space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses, as opposed to full market value (California DOC 2019d).

Forestry Resources

There are no forestry resources in the project area. The following discussion provides the definitions of forestland that were used to determine if forestland occurred in the area.

California Public Resources Code

Public Resources Code (PRC) Section 12220(g) defines forestland as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

PRC Section 4526 defines timberland, a subset of forestland, as land—other than land owned by the federal government and land designated by the board as experimental forestland—that is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species must be determined by the State Board of Forestry and Fire Protection on a district basis.

Forest Taxation Reform Act

The Forest Taxation Reform Act, enacted in 1976, provides guidelines that allow cities and counties with qualifying timberland to adopt Timberland Production Zones (TPZs) that protect timberlands from incompatible use. TPZs are privately owned land or land acquired for state forestry purposes. The California Department of Forestry and Fire Protection has jurisdiction over timber harvest and timberland conversion decisions regarding TPZs, which passes down to county agricultural departments.

3.2.2.3 Local and Regional

Agricultural Resources

The Malibu General Plan includes the following goals, objectives, policies, and objectives related to agriculture:

- **1.4.5 LU Goal 5:** Protect agriculture that requires or is enhanced by Malibu's unique climate.
- **LU Objective 5.1:** Rural character preserved through agricultural and horticultural land uses.
- **LU Policy 5.1.1:** The City must permit compatible agricultural and horticultural uses within the rural residential zones in order to maintain the rural traditions in the area.
- **LU Policy 5.1.2:** The City must prohibit development and proposed uses adjacent to agricultural and horticultural uses that degrade or substantially interfere with existing agricultural and horticultural uses.
- **LU Policy 5.1.3:** The City must encourage agricultural and horticultural uses that require limited land area, such as greenhouses and nurseries.
- **LU Policy 5.1.4:** The City must develop an integrated pest-management program to limit adverse impacts from herbicides, pesticides, and fertilizers.
- **LU Implementation Measure 88:** Develop incentive and protection measures, such as regulating adjacent uses to ensure that new uses do not interfere with productivity and permitting necessary accessory structures by right in Rural Residential zones, to encourage land use for production of tropical fruits, nuts, and flowers where sensitive natural biota communities will not be adversely impacted.
- **LU Implementation Measure 89:** Permit non-retail greenhouses and nurseries in all rural areas to encourage land use for production of tropical fruits, nuts, and flowers where sensitive natural biota communities will not be adversely affected (City of Malibu 2017).

Forestry Resources

Neither Malibu nor Los Angeles County has any forest regulations or policies applicable to the project area.

3.2.3 Impacts and Mitigation

3.2.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below:

- Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
- Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of forestland (as defined in PRC § 12220[g]), timberland (as defined by PRC § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104[g]).
- Result in loss of forestland or conversion of forestland to non-forest use.
- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forestland to non-forest use.

3.2.3.2 Impacts

Impact AG-II.a.

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No impact.

There are no Farmlands (as defined by FMMP) in the areas of Malibu and Los Angeles County where the District 29 project improvements would occur. There would be no conversion of Farmland to non-agricultural use as a result of the construction or operation of the project, and no impacts would occur.

Impact AG-II.b.

Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact.

No land is zoned for agricultural use or covered by a Williamson Act contract in the areas of Los Angeles County where the District 29 improvements would occur. Malibu has designated 2 acres to Agriculture/Horticulture at 29081 PCH on the northern side of PCH between Cavalleri Road and Heathercliff Road, occupied by Moon Valley Nurseries, a growing yard and wholesale nursery that is open to the public. The Point Dune Tank Site construction staging area is approximately 500 feet north of this location, with a large developed area separating the two uses. The Point Dune Tank Site is

accessed from the north on Gayton Place, and Moon Valley Nurseries is assessed directly from PCH. There are no pipeline improvements along this portion of PCH. Therefore, the project would not affect this agriculture/horticulture use nor conflict with existing zoning for agricultural or Williamson Act contracts, and no impact would occur.

Impact AG-II.c.

Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (Government Code Section 51104(g))?

No impact.

No land zoned for forestland, timberland, or TPZs is in the areas of Malibu and Los Angeles County where the District 29 project improvements would occur. There would be no conflict with existing zoning for forestland, and no impact would occur.

Impact AG-II.d.

Would the project result in the loss of forestland or conversion of forestland to non-forest use?

No impact.

There is no forestland in the areas of Malibu and Los Angeles County where the District 29 project improvements would occur. The nearest public forestland is approximately 18 miles away, and the nearest timber production area is in Kern County, approximately 147 miles from Malibu. There would be no loss of forestland or conversion of forestland to non-forest use; therefore no impact would occur.

Impact AG-II.e.

Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

No impact.

There are no agricultural or forestlands in the areas of Malibu and Los Angeles County where the District 29 improvements would occur or anywhere near the improvements. There is no potential to cause changes in the existing environment that could result in conversion of farmland to nonagricultural use or conversion of forestland to non-forest use. No impact would occur.

3.2.3.3 Mitigation Measures

The improvements in the District 29 projects would not result in impacts to agricultural or forestry resources. No mitigation measures are required.

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3.3 Air Quality

This section describes the existing conditions for air quality, the regulatory framework associated with air quality, and the impacts on air quality that would result from the proposed project.

3.3.1 Environmental Setting

3.3.1.1 Regional Setting

The proposed project lies within the Los Angeles County portion of the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD has jurisdiction over approximately 10,743 square miles, including all of Orange County, Los Angeles County (except for the Antelope Valley), the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is a sub-region of SCAQMD's jurisdiction. Although air quality in this area has improved, the Basin requires continued diligence to meet air-quality standards.

3.3.1.2 Climate and Meteorological Conditions

The proposed project would occur within the Basin, which covers approximately 6,745 square miles and is bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The Southern California region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (i.e., weather and topography), as well as human-made influences (i.e., development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

3.3.1.3 Regional and Localized Air Quality

Criteria Pollutants

Air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants, known as *criteria air pollutants*, are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources, and include: carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and most fine particulate matter (particulate matter 10 microns or less in diameter [PM_{10}], particulate matter 2.5 microns or less in diameter [$PM_{2.5}$]), lead (Pb), and fugitive dust. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOCs and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary

pollutants. The following descriptions of each criteria air pollutant and their health effects are based on information provided by SCAQMD (2017).

3.3.1.4 Federal Criteria Air Pollutants

Federal criteria pollutants are regulated through the National Ambient Air Quality Standards (NAAQS). The federal criteria air pollutants are discussed below.

Ozone (O_3)

Ozone, a colorless gas with a sharp odor, is a highly reactive form of oxygen (O). High O_3 concentrations exist naturally in the stratosphere; however, it is also formed in the atmosphere when VOCs and NO_X react in the presence of ultraviolet sunlight (also known as *smog*). The primary sources of VOC and NO_X, the components of O_3, are automobile exhaust and industrial sources. Some mixing of stratospheric O_3 downward through the troposphere to the Earth's surface does occur; however, the extent of O_3 transport is limited.

The propensity of O_3 for reacting with organic materials causes it to be damaging to living cells, creating health effects. O_3 enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for O_3 effects.

Short-term exposures (i.e., 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. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high O_3.

Nitrogen Dioxide (NO_2)

Nitrogen dioxide is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas formed from nitrogen (N_2) and oxygen (O_2) under conditions of high temperature and pressure, which are generally present during combustion of fuels (e.g., motor vehicles); NO reacts rapidly with the oxygen in the air to form NO_2, which is responsible for the brownish tinge of polluted air. The two gases, NO and NO_2, are referred to collectively as NO_X. In the presence of sunlight, atmospheric NO_2 reacts and splits to form an NO molecule and an oxygen atom. The oxygen atom can react further to form O_3, via a complex series of chemical reactions involving hydrocarbons.

Population-based studies suggest that an increase in acute respiratory illness—including infections and respiratory symptoms in children (not infants)—is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient NO_2 levels found in Southern California homes that generally have fewer or no stoves. In healthy people, increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 (SCAQMD 2017). Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO_2

exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits.

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, produced by both natural processes and human activities. In remote areas far from human habitation, CO occurs in the atmosphere at an average background concentration of 0.04 parts per million (ppm), primarily as a result of natural processes, such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include those with diseases involving heart and blood vessels, fetuses, and people with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Sulfur Dioxide (SO_2)

Sulfur dioxide is a colorless gas with a sharp odor that reacts in air to form sulfuric acid, which contributes to acid precipitation, and sulfates, which are components of particulate matter. Main sources of SO_2 include coal and oil used in power plants and industries. Exposure for a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics; all asthmatics are sensitive to the effects of SO_2. In asthmatics, increase in resistance to airflow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses, even after exposure to higher concentrations of SO_2.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particles small enough to be inhaled into the deepest parts of the lung are of great concern to public health. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Emissions of $PM_{2.5}$ result from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_2, NO_X, and VOC.

Respirable particles (PM_{10}) can accumulate in the respiratory system and aggravate health problems, such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM. A consistent correlation between elevated ambient fine particulate matter ($PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the U.S. and various areas around the

world. Studies have reported an association between long-term exposure to air pollution dominated by $PM_{2.5}$ and increased mortality, reduction in life span, and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions, school and kindergarten absences, a decrease in respiratory function in normal children, and increased medication use in children and adults with asthma. Studies have also shown lung-function growth in children is reduced with long-term exposure to PM. In addition to children, the elderly and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

Lead (Pb)

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, a dramatic reduction in atmospheric Pb took place over the past three decades. Exposure to low levels of Pb 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 quotient. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death. There is no evidence to suggest that there are direct effects of Pb on the respiratory system.

3.3.1.5 California Criteria Air Pollutants

The State of California has established California Ambient Air Quality Standards (CAAQS) for the following pollutants, in addition to those that are regulated under the NAAQS.

Visibility-reducing Particulates

Deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality. Visibility reduction from air pollution is often due to the presence of sulfur and NO_X, as well as PM.

Sulfates ($X\text{-}SO_4^{2-}$)

Sulfates ($X\text{-}SO_4^{2-}$) are chemical compounds which contain the sulfate ion (SO_4^{2-}) and are part of the mixture of solid materials that compose PM_{10}. Oxidation of SO_2 produces most SO_X in the atmosphere and yields sulfur trioxide (SO_3), which reacts with water to form sulfuric acid and contributes to acid deposition. The reaction of sulfuric acid with basic substance, such as ammonia, yields SO_4^{2-}, a component of PM_{10} and $PM_{2.5}$. Mortality and morbidity effects have been observed with an increase in ambient SO_4^{2-} concentrations. However, studies to separate the effects of SO_4^{2-} from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure.

Hydrogen Sulfide (H_2S)

Hydrogen sulfide (H_2S), a colorless, flammable, poisonous compound having a characteristic rotten-egg odor, is used as a reagent and intermediate in the preparation of other reduced-sulfur compounds. It is also a byproduct of the desulfurization processes in the oil and gas industries and rayon production, sewage treatment, and leather tanning. Geothermal power plants, petroleum production

and refining, and sewer gas are specific sources of H_2S in California. High H_2S exposure has been documented as a cause of sudden death in the workplace.

Vinyl Chloride

Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and classified as a known carcinogen by the American Conference of Governmental Industrial Hygienists and the International Agency for Research on Cancer. At room temperature, vinyl chloride is a gas with a sickly sweet odor that is easily condensed. However, it is stored at cooler temperatures as a liquid. Due to the hazardous nature of vinyl chloride to human health, there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product.

Vinyl chloride is an important industrial chemical chiefly used to produce polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors, where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. PVC is then sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles. Vinyl chloride is not only used to make PVC products, but is also a natural degradation product of chlorinated industrial solvents (e.g., perchloroethylene, trichloroethene). Vinyl chloride emissions are historically associated primarily with landfills and sites contaminated with chlorinated solvents.

Toxic Air Contaminants

Toxic air contaminants (TAC) are generally defined as those contaminants known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Air toxics are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Air toxics are emitted by a variety of industrial processes that include petroleum refining, electric utility and chrome-plating operations, and commercial operations, such as gasoline stations, dry cleaners, and motor vehicle exhaust, and may exist as PM_{10} and $PM_{2.5}$ or as vapors (gases).

Air toxics include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources. According to the 2009 *California Almanac of Emissions and Air Quality,* the majority of the estimated health risks from air toxics can be attributed to relatively few compounds, the most important being particulate matter (PM) from the exhaust of diesel-fueled engines (diesel PM). Diesel PM differs from other air toxics in that it is a complex mixture of hundreds of substances rather than a single substance (CARB 2009).

Diesel PM is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel PM are of the greatest health concern and may be composed of elemental carbon with adsorbed compounds, such as organic compounds, SO_X, nitrates, metals, and other trace elements. Diesel PM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars, and off-road diesel engines, including locomotives, marine vessels, and heavy-duty equipment. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions

varies depending on engine type, operating conditions, fuel composition, and lubricating oil, and whether an emission control system is present.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat, and lungs, as well as some neurological effects, such as lightheadedness. Acute exposure may also elicit a cough or nausea, as well as exacerbate asthma. Chronic exposure to diesel PM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel PM is a likely carcinogen. Human epidemiological studies have demonstrated an association between diesel PM exposure and increased lung cancer rates in occupational settings.

3.3.1.6 Ambient Air Monitoring Stations

SCAQMD maintains a network of air quality monitoring stations throughout the Basin, each of which provides ambient air monitoring data for specific areas of the Basin. The proposed project would be located in source receptor area (SRA) 2 (Northwest Coastal Los Angeles County), which is monitored by the West Los Angeles Veterans Affairs (VA) Hospital Monitoring Station. Because the West Los Angeles VA Hospital station monitors only O_3, CO, and NO_2, the El Rio-Rio Mesa School No. 2 (Oxnard) Monitoring Station was used to approximate the background concentration for the remaining criteria pollutants (i.e., PM_{10} and $PM_{2.5}$). The most recent complete data available cover 2015 to 2017. The monitoring data shown below in Table 3.3-1 indicate that state and/or federal standards have been exceeded for O_3, PM_{10}, and $PM_{2.5}$.

Table 3.3-1. Ambient Background Concentrations for Ambient Air Monitoring Stations[1]

Pollutant Standards	2015	2016	2017
1-Hour Ozone (O3) – West Los Angeles VA Hospital			
State Maximum Concentration (ppm)	0.102	0.085	0.099
Number of Days Standard Exceeded			
CAAQS 1-hour Standard (> 0.09 ppm)	2.0	0.0	1.0
8-Hour Ozone (O_3) – West Los Angeles VA Hospital			
State Maximum Concentration (ppm)	0.073	0.073	0.077
National Maximum Concentration (ppm)	0.072	0.073	0.077
National Fourth-Highest Concentration (ppm)	0.069	0.066	0.069
National Design Value (ppm)	0.068	0.070	N/A
Number of Days Standard Exceeded			
CAAQS 8-hour Standard (> 0.070 ppm)	3.0	2.0	3.0
NAAQS 8-hour Standard (> 0.070 ppm)	2.0	2.0	3.0
Carbon Monoxide (CO) – West Los Angeles VA Hospital			
Maximum Concentration 8-hour Period (ppm)	1.4	1.1	1.2
Number of Days Standard Exceeded			
NAAQS 8-hour Standard (≥ 9 ppm)	0.0	0.0	0.0
CAAQS 8-hour Standard (≥ 9.0 ppm)	0.0	0.0	0.0
Nitrogen Dioxide (NO_2) – West Los Angeles VA Hospital			
Maximum National 1-hour Concentration (ppm)	0.0676	0.0545	0.0557
Maximum State 1-hour Concentration (ppm)	0.067	0.054	0.055

Pollutant Standards	2015	2016	2017
Annual Average Concentration (ppm)	0.011	0.011	N/A
Number of Days Standard Exceeded			
CAAQS 1-Hour Standard (0.18 ppm)	0.0	0.0	0.0
NAAQS 1-Hour Standard (100 ppb)	0.0	0.0	0.0
Suspended Particulates (PM_{10}) – El Rio-Rio Mesa School No. 2 (Oxnard)			
Maximum State 24-hour Concentration (µg/m³)	92.0	101.6	286.0
Maximum National 24-hour Concentration (µg/m³)	93.3	105.0	287.9
State Annual Average Concentration (µg/m³)	25.6	N/A	29.0
Number of Days Standard Exceeded			
CAAQS 24-hour Standard (> 50 µg/m³)	6.0	14.0	29.0
NAAQS 24-hour Standard (> 150 µg/m³)	0.0	0.0	1.0
Suspended Particulates ($PM_{2.5}$) – El Rio-Rio Mesa School No. 2 (Oxnard)			
Maximum National 24-hour Concentration (µg/m³)	25.5	22.7	81.3
24-hour Standard 98th Percentile (µg/m³)	21.5	16.2	21.6
National Annual Average Concentration (µg/m³)	9.5	8.1	9.2
State Annual Average Concentration (µg/m³)	9.6	8.1	N/A
Number of Days Standard Exceeded			
NAAQS 24-hour Standard (> 35 µg/m³)	0.0	0.0	4.0

[1] West Los Angeles-VA Hospital Ambient Air Monitoring Station (EPA AQS Number 060370113 /CARB Number 70091)

El Rio-Rio Mesa School No. 2 (Oxnard) Ambient Air Monitoring Station (EPA AQS Number 061113001 /CARB Number 56436)

ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; N/A = data not available.

Sources: CARB 2019, EPA 2019a.

3.3.1.7 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The California Air Resources Board (CARB) has identified the following population groups as those most likely to be affected by air pollution: children less than 14 years of age, adults over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. Land uses where these population groups are likely to spend a substantial amount of time are considered *sensitive receptors*. According to the SCAQMD, sensitive land uses include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The primary sensitive receptors in the vicinity of project construction activities are the adjacent residences to the project locations (see Section 3.3.3.2, *Methodology*).

3.3.2 Regulatory Setting

This section describes the plans, policies, and regulations related to air quality applicable to the proposed project.

3.3.2.1 Federal

Federal Clean Air Act

The Federal Clean Air Act (CAA) was first enacted in 1963, but has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes the NAAQS and specifies future dates for achieving compliance. The CAA also mandates that the states submit a State Implementation Plan for regions that fail to meet the standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emissions-reduction goals for areas that fail to meet the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect development of the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 3.3-2 shows the NAAQS currently in effect for each criteria pollutant. Table 3.3-3 shows the attainment status for the NAAQS. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and adopt a standard for $PM_{2.5}$. The 8-hour O_3 NAAQS was further amended in October 2015.

Table 3.3-2. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[1]	NAAQS[2]
O_3	1 hour 8 hour	0.09 ppm 0.070 ppm	-- 0.070 ppm
CO	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
NO_2	1 hour	0.18 ppm	100 ppb
	Annual Arithmetic Mean	0.030 ppm	53 ppb
SO_2	1 hour	0.25 ppm	75 ppb
	24 hour	0.04 ppm	0.14 ppm
PM_{10}	24 hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	--
$PM_{2.5}$	24 hour	--	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3
Sulfates	24 hour	25 µg/m^3	--
Pb	30 day average	1.5 µg/m^3	--
	Calendar quarter	--	1.5 µg/m^3
	Rolling 3-Month Average	--	0.15 µg/m^3
Hydrogen Sulfide	1 hour	0.03 ppm	--
Vinyl Chloride	24 hour	0.01 ppm	--

[1] The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

[2] The NAAQS, other than O_3 and those pollutants using annual arithmetic mean, are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1.

Notes: ppm = parts per million by volume; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.

Source: CARB 2016.

Table 3.3-3. Federal and State Attainment Status for the South Coast Air Basin

Pollutants	Federal Classification	State Classification
O_3 (1-hour standard)	—	Nonattainment
O_3 (8-hour standard)	Nonattainment, Extreme	Nonattainment
PM_{10}	Attainment/Maintenance	Nonattainment
$PM_{2.5}$	Nonattainment, Moderate	Nonattainment
CO	Attainment/Maintenance	Attainment
NO_2	Attainment/Maintenance	Attainment
SO_2	Attainment	Attainment
Pb	Nonattainment[1]	Attainment

[1] Note that only the Los Angeles County portion of the Basin is nonattainment for NAAQS Pb. The remainder of the Basin is in attainment.
Sources: CARB 2017, EPA 2019b.

3.3.2.2 State

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The Basin is in compliance with the California standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 3.3-2, above, details the current CAAQS, and Table 3.3-3, above, provides the Los Angeles County portion of the Basin's attainment status with respect to CAAQS.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, CARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the project, including heavy-duty trucks and off-road construction equipment, will be required to comply with the standards.

Toxic Air Contaminants

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

CARB identified diesel particulate matter (DPM) as a TAC in 1998 (CARB 1998). Shortly thereafter, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (CARB 2000). The goal of the plan is to reduce DPM (respirable particulate matter) emissions and the associated health risk by 75 percent in 2010 and 85

percent by 2020. The plan identifies 14 measures that CARB will implement over the next several years. Because CARB measures would be enacted before any phase of construction, the proposed project would be required to comply with applicable diesel control measures.

3.3.2.3 Local and Regional

South Coast Air Quality Management District Rules and Regulations

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources, control programs for area sources and indirect sources, an SCAQMD permitting system that allows no net increase in emissions from any new or modified (i.e., previously permitted) emissions sources, and transportation control measures. The most recent publication is the 2016 AQMP, a regional blueprint for achieving the federal air quality standards and healthful air.

The 2016 AQMP represents a thorough analysis of existing and potential regulatory control options and includes available, proven, and cost-effective strategies to pursue multiple goals in promoting reductions in greenhouse gas (GHG) emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP focuses on demonstrating NAAQS attainment dates for the 2008 8-hour O_3 standard, the 2012 annual $PM_{2.5}$ standard, and the 2006 24-hour $PM_{2.5}$ standard. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approach attainment deadlines are met, public health is protected to the maximum extent feasible, and the region is not faced with burdensome sanctions if the NAAQS are not met by the established date.

SCAQMD published the *CEQA Air Quality Handbook* in November 1993[1] to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses as part of CEQA documents prepared within SCAQMD's jurisdiction. In addition, SCAQMD has published two guidance documents: *Localized Significance Threshold Methodology for CEQA Evaluations* (2003, revised 2008) and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (2006). These publications provide guidance for evaluating localized effects from mass emissions during construction. Both were used in the preparation of this analysis (SCAQMD 2006, 2008).

The proposed project is also required to comply with all applicable SCAQMD Rules and Regulations pertaining to construction activities, including, but not limited to, the following.

SCAQMD Rule 402—Nuisance

This rule prohibits the discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, endanger the comfort, repose, health, or safety of any such persons or the public, or cause, or have a natural tendency to cause injury or damage to business or property. Odors are regulated under this rule.

SCAQMD Rule 403—Fugitive Dust

This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the property line of the emission's source. During

[1] Section updates provided on the SCAQMD website: http://www.aqmd.gov/ceqa/hdbk.html.

construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earthmoving and grading activities. These measures would include site pre-watering and re-watering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on properties with 50 or more acres of disturbed surface area or any earthmoving operation with a daily earthmoving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintenance of dust control records, and designation of an SCAQMD-certified dust control supervisor.

SCAQMD Rule 1108—Cutback Asphalt

This rule specifies VOC content limits for cutback asphalt.

SCAQMD Rule 1470—Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines

This rule specifies requirements for stationary diesel engines, including emergency standby generators. It requires owners or operators of emergency standby generators to keep monthly logs of usage, limits maintenance and testing to 20 hours per year, and requires emission rates to not exceed 0.40 gram per brake-horsepower hour.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG addresses regional issues related to transportation, the economy, community development, and the environment, and is the federally designated metropolitan planning organization for a majority of the region and the largest metropolitan planning organization in the nation. As required by federal and state law, SCAG develops plans pertaining to transportation, growth management, hazardous waste management, housing, and air quality. SCAG data are used in the preparation of air quality forecasts and the conformity analysis included in the AQMP.

3.3.3 Impacts and Mitigation

3.3.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruction of implementation of the applicable air quality plan.
- Create a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Create other emissions (such as those leading to odors) affecting a substantial number of people

Both regional and local impact analyses are performed for certain thresholds, where appropriate. A regional impact analysis is based on attaining or maintaining regional emissions standards, and a local impact analysis compares the onsite emissions of a pollutant to a health-based standard.

As indicated in Table 3.3-4, SCAQMD's thresholds are used to determine impacts relative to applicable Appendix G CEQA checklist items. Therefore, a significant impact would occur if the proposed project would exceed SCAQMD's established daily emission rate, risk value, or concentration thresholds identified in Table 3.3-4.

Table 3.3-4. SCAQMD Air Quality Thresholds

Pollutant	Daily Regional Mass Emissions Thresholds (pounds/day)
VOC	75
NO_X	100
CO	550
PM_{10}	150
$PM_{2.5}$	55
SO_X	150
Pollutant	Daily Localized Significance Thresholds (pounds/day)[1]
NO_X	103
CO	562
PM_{10}	4
$PM_{2.5}$	3
Pollutant	Other Thresholds
TACs	Maximum Incremental Carcinogenic Risk ≥ 10 in 1 million
	Chronic and Acute Hazard Index ≥ 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to Rule 402

[1] Project activities would occur in SRA 2 within the Basin. A 1-acre site and 25-meter receptor distance for this location was selected on the basis that it has the most stringent localized significance threshold.

3.3.3.2 Methods

Because the proposed improvements intend to make water system improvements to provide a more reliable system, and the system would continue operating similar to present conditions, there would be no change in the operational characteristics relative to existing conditions once rehabilitation activities are complete. No additional emissions would occur over the existing condition. Therefore, no operational air quality impacts are considered and the following analysis is limited to the construction period.

Construction schedule information, construction equipment that would be used, excavation and paving quantities, and truck trips were based on information provided by the Los Angeles County Department of Public Works (LACDPW) engineering staff. Pollutant estimates were based on a combination of assumptions based on LACDPW's experience with similar types of projects, information from the project description, and model defaults derived from sources identified herein.

Emission factors for on-road vehicles (e.g., employee vehicles and haul trucks) and off-road construction equipment (e.g., loaders, cranes) were obtained from the Road Construction Emissions Model (RCEM) (version 9.0.0) developed by the Sacramento Metropolitan Air Quality Management District for estimating pollutant emissions from road construction and other linear project types. Although RCEM was developed for the Sacramento Metropolitan Air Quality Management District, the model includes emission factors applicable statewide and is therefore recognized as a tool for

analyzing air quality in other air districts, including areas under the jurisdiction of SCAQMD. The model includes data from the following sources:

- Emission factors from CARB's EMFAC2017 model for on-road emissions.
- Emission factors from CARB's OFFROAD model for construction equipment emissions.
- Fugitive re-entrained road-dust emissions are based on the United States Environmental Protection Agency's (EPA) AP-42 methodology (EPA 2011).
- Fugitive PM_{10} and $PM_{2.5}$ dust emissions associated with earthwork are based on daily intensity rates (acres graded per day). The dust-control methods for the project will be specified in the dust-control plan that would be submitted to the SCAQMD per Rule 403.

Emissions from each of the sources above are presented at the daily scale and compared with the SCAQMD construction thresholds identified above. Peak daily construction emissions were estimated by calculating emissions for the individual construction scenarios, and then summing emissions from overlapping activities for regional mass emissions. Examples of overlap are as multiple construction activities for a single improvement (such as construction vehicle trips and ground clearing) and two or more improvements under construction at the same time. For localized emissions, emissions from each project element were considered independently of other project elements because there would be little geographic overlap between the project locations. Thus, only site-specific emissions were compared to the SCAQMD localized significance thresholds (LSTs).

All assumptions, emissions calculation worksheets, and modeling output files are provided in Appendix B.

Applicable Air Quality Plan

As discussed in Section 3.3.2.3, *Local and Regional*, the 2016 AQMP is the most recently adopted AQMP. SCAQMD rules and guidance documents, such as the *CEQA Air Quality Handbook* and the *Localized Significance Threshold Methodology for CEQA Evaluations*, provide the means by which projects demonstrate their consistency with the AQMP.

Criteria for determining consistency for the AQMP are defined in the *CEQA Air Quality Handbook*. There are two key indicators of consistency:

- **Consistency Criterion No. 1**: Whether the project will result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- **Consistency Criterion No. 2**: Whether the project will exceed the assumptions in the AQMP or increments based on the year of project build-out and phase.

Air Quality Standards and Criteria Pollutants

The significance thresholds identified above are the project-level air quality standards that are used to evaluate project impacts.

Sensitive Receptors

The LST methodology identified above is used as the project-level air quality standard to evaluate localized impacts on sensitive receptors. The LST analysis, which addresses pollutant proximity to

sensitive receptors, was performed using the closest receptor distance (25 meters) and most conservative site size (1 acre) in SRA 2.[2]

Other Emissions

Other emissions, including those related to objectionable odors, are discussed qualitatively.

3.3.3.3 Impacts

Impact AQ-III.a.

Would the project conflict with or obstruct implementation of the applicable air quality plan?

No impact.

Consistency Criterion No. 1 refers to violations of the NAAQS and CAAQS. SCAQMD recommends an air quality modeling analysis be performed to identify project impacts. In order to be found consistent with Consistency Criterion No. 1, the analysis needs to demonstrate that project emissions would not increase the frequency or severity of existing violations or cause or contribute to new violations. No permanent changes in land use or pollutant emissions associated with operation of the proposed project would result from project implementation, and construction-period emissions would not exceed regional mass emissions thresholds developed to aid the Basin in attaining state and federal standards for those pollutants for which it is nonattainment (see the discussion for Impact AQ-2 below). Therefore, the proposed project would not conflict with Consistency Criterion No. 1.

For Criterion No. 2, SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Basin is in nonattainment status. SCAQMD's most recent plan to achieve air quality standards is the 2016 AQMP, adopted by the SCAQMD Governing Board on March 3, 2017. The 2016 AQMP outlines a comprehensive control strategy to meet the requirement for expeditious progress toward attainment of the 2008 8-hour O_3 standard, the 2012 annual $PM_{2.5}$ standard, and the 2006 24-hour $PM_{2.5}$ standard through all feasible control measures. The 2016 AQMP also includes specific measures for implementing the O_3 strategy from the 2007 AQMP and attaining the 8-hour O_3 standard by 2023 (SCAQMD 2017).

The strategies for attaining state and federal ambient air quality standards are based, in part, on regional population, housing, and employment projections prepared by the region's cities and counties and incorporated by SCAG. As such, projects that propose development that is consistent with the growth anticipated in the relevant land use plans used in the formulation of the AQMP are considered to be consistent with the AQMP.

Given that the proposed project would not involve changes to land use and would allow for improved water service in the project area, the proposed project is considered consistent with the assumptions used in the development of the AQMP. Therefore, the proposed would not conflict with Consistency Criterion No. 2.

[2] LST standards increase as the distance from emissions source increases and as site acreage increases. As such, it is most conservative to assume the closest receptor distance and smallest construction site acreage.

Impact AQ-III.b.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard?

Less than significant.

Regional Mass Emissions

Pollutants would be emitted as a result of construction activities stemming from the use of construction equipment (primarily diesel-powered), haul and materials vehicle trips, and fugitive dust. Table 3.3-5 shows estimated emissions for each year in which project construction activities would be undertaken. No exceedances of regional mass thresholds would occur. In addition, minor increases in emissions increases are expected to occur as a result of reductions in roadway vehicular capacity when pipeline segments within roadways are replaced. Although increases could occur, such increases in pollutant emissions would be of limited duration, and cannot be estimated without a high degree of speculation.

Table 3.3-5. Daily Regional Mass Emissions (pounds per day)

Project Improvement	ROG_b	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
2020						
Pacific Coast Highway (PCH) 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)[a]	5.0	34.0	49.6	2.9	2.3	0.1
District 29 Creek Crossing Repairs[a]	5.0	33.9	48.6	3.4	2.4	0.1
Maximum Concurrent Emissions	10.0	67.9	98.2	6.2	4.7	0.2
2021						
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)[a]	5.0	34.0	49.6	2.9	2.3	0.1
District 29 Creek Crossing Repairs[a]	5.0	33.9	48.6	3.4	2.4	0.1
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements [a]	4.7	33.4	46.4	2.7	2.1	0.1
Coastline Drive 12-Inch Waterline Improvement[a]	4.4	33.0	44.0	2.5	2.0	0.1
Maximum Concurrent Emissions	10.0	67.9	98.2	6.2	4.7	0.2
2022						
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	4.7	33.4	46.4	2.7	2.1	0.1
Coastline Drive 12-Inch Waterline Improvement	4.4	33.0	44.0	2.5	2.0	0.1
Fernwood Tank Improvement						
Grading/Excavation	1.4	12.3	17.2	2.1	1.0	0.0
Drainage/Utilities/Sub-Grade	1.3	11.9	9.4	1.8	0.7	0.0
Maximum Concurrent Emissions	9.1	66.5	90.4	5.2	4.0	0.2

Project Improvement	ROG[b]	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
2023						
Fernwood Tank Improvement						
Grading/Excavation	1.4	12.3	17.2	2.1	1.0	0.0
Drainage/Utilities/Sub-Grade	1.3	11.9	9.4	1.8	0.7	0.0
PCH and Topanga Beach Drive Waterline Improvements	3.7	31.7	34.8	2.0	1.5	0.1
Maximum Concurrent Emissions	3.7	31.7	34.8	2.1	1.5	0.1
2024						
PCH and Topanga Beach Drive Waterline Improvements	3.7	31.7	34.8	2.0	1.5	0.1
Maximum Concurrent Emissions	3.7	31.7	34.8	2.0	1.5	0.1
2025						
Emergency Source of Water Supply Connection (Las Virgenes Connection)	3.4	31.2	31.6	1.8	1.3	0.1
Maximum Concurrent Emissions	3.4	31.2	31.6	1.8	1.3	0.1
2026						
Emergency Source of Water Supply Connection (Las Virgenes Connection)[a]	3.4	31.2	31.6	1.8	1.3	0.1
Big Rock Bypass Improvements [a]	3.4	31.2	31.6	1.8	1.3	0.1
Maximum Concurrent Emissions	6.8	62.5	63.2	3.6	2.5	0.2
Regional Mass Emissions Threshold	75	550	100	150	55	150
Threshold Exceeded?	No	No	No	No	No	No

Source: Calculations by ICF 2019 (see Appendix B).

[a] Based on the project schedule provided by LACDPW staff, District 29 Creek Crossing Repair and PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) would overlap in 2020 and 2021; the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements and Coastline Drive 12-Inch Waterline Improvement would overlap in 2021 and 2022; and the Emergency Source of Water Supply Connection (Las Virgenes Connection) and Big Rock Bypass Improvements would overlap in 2026. The maximum concurrent emissions that would occur during each year is provided.

[b] The terms volatile organic compounds (VOCs) and reactive organic gases (ROG) are used interchangeable. ROG is used in this table based on the Road Construction Emissions Model.

Table 3.3-6. Daily Localized Emissions (pounds per day)

Project Element	CO	NO_X	PM_{10}	$PM_{2.5}$
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	32.9	47.1	2.3	2.1
District 29 Creek Crossing Repair	33.1	48.1	2.3	2.2
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	32.4	43.8	2.1	1.9
Coastline Drive 12-Inch Waterline Improvement	32.1	41.4	1.9	1.8
Fernwood Tank Improvement				
Grading/Excavation	11.3	13.9	0.7	0.6
Drainage/Utilities/Sub-Grade	11.3	9.0	0.4	0.4

Project Element	CO	NO_X	PM_{10}	$PM_{2.5}$
PCH and Topanga Beach Drive Waterline Improvements	30.8	32.3	1.4	1.3
Emergency Source of Water Supply Connection (Las Virgenes Connection)	30.4	29.0	1.2	1.1
Big Rock Bypass Improvements	30.4	29.0	1.2	1.1
Localized Significance Threshold	562.0	103.0	4.0	3.0
Threshold Exceeded?	No	No	No	No

Source: Calculations by ICF 2019 (see Appendix B)
Notes: 1-acre site and 25-meter receptor distances in SRA 2 Northwest Coastal LA County are used, which have the most stringent LSTs; no LSTs have been established for VOC and SO_X.

Impact AQ-III.c.[3]

Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than significant.

As discussed above, construction activities under the proposed project would occur near sensitive receptors, including residences adjacent to pipelines that would be replaced. Thus, construction activities, including the use of diesel-fueled equipment, haul trucks, and fugitive dust emissions would occur near sensitive receptors. However, as shown in Table 3.3-6, none of the project elements would exceed LSTs established to identify potential impacts on receptors near sources of pollutant emissions. The LST for a 1-acre site with a 25-meter receptor distance was used, as this has the most stringent standards in SCAQMD's LST methodology. Based on onsite emissions not exceeding LSTs, impacts related to the exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Health Implications of Criteria Pollutants

All criteria pollutants are associated with some form of health risk, such as asthma and other respiratory conditions. The potential health effects associated with criteria pollutants are described in Section 3.3.1.4, *Federal Criteria Air Pollutants*. However, negative health effects associated with criteria pollutant emissions are highly dependent upon a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, health, gender]). In particular, O_3 can be formed through complex chemical reactions over long distances. Directly emitted PM also does not always equate to a specific localized impact because emissions can be transported and dispersed. Given factors that influence the formation and transport of pollution, quantifying specific health consequences from the proposed project's construction emissions is not feasible because the models designed to evaluate future O_3 and PM levels and resulting health effects are based on regional or national conditions. In other words, the minor increases in air pollution from the proposed project's construction activities would not result in material changes to ambient air quality or human health.

SCAQMD has indicated that it would take a large amount of additional precursor emissions to cause a modeled increase in ambient O_3 levels over an entire region. Specifically, SCAQMD's own modeling showed that reducing NO_X by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons

[3] CEQA Guidelines refer to this as III.d. There is no III.c. This is a clerical error. For clarity, this document corrected the mistake in the CEQA Guidelines.

per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 ppb (SCAQMD 2015). Additionally, based on a health impact analysis conducted by SCAQMD, it was found that emissions of NO_X and VOC of 6,620 and 89,180 pounds per day, respectively, only resulted in 20 premature deaths per year. In turn, SCAQMD affirms that a project emitting NO_X or VOC below their threshold of 10 tons per year "is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models," and it would "not be feasible to directly correlate project emissions of VOC or NO_X with specific health impacts from ozone" (SCAQMD 2015).

As shown in Table 3.3-5, the proposed project's estimated regional construction emissions would not exceed any of SCAQMD's regional significance thresholds for criteria pollutants. Additionally, given that the proposed project's peak daily construction regional emissions of 10 pounds per day for VOC and 98 pounds per day for NO_X would not exceed 10 tons per year for either pollutant, the proposed project would represent a relatively small project where it would not be feasible to directly correlate its emissions of VOC or NO_X with specific health impacts from ozone. Accordingly, an analysis correlating the relatively minor emissions generated by the project with specific levels of health impacts would not yield reliable or accurate results and has therefore not been conducted.

Furthermore, it should be noted that the NAAQS and CAAQS are health-protective standards and define the maximum amount of ambient pollution that can be present without harming public health. SCAQMD's LSTs represent the level of pollutant emissions from onsite sources from a project that would not exceed the most stringent applicable federal or state ambient air quality standards. As such projects with emissions below the applicable LSTs will not be in violation of the NAAQS or CAAQS, and, thus, the EPA's and CARB's health protective standards. As shown in Tables 3.3-6, the maximum daily emissions would not exceed the applicable LSTs. Therefore, there would be no violations of the health-protective CAAQS and NAAQS, and impacts would be less than significant.

Localized Emissions

Localized emissions would result from construction activities that would occur at a given site and in the immediate vicinity of specific receptors. Only onsite construction equipment emissions are considered, as all but a negligible amount of on-road vehicle use would occur away from the site. Due to the linear nature of most of the proposed improvements and the fact that sites would be spread out geographically, the emissions of project improvements are considered independently. Table 3.3-6 shows the onsite emissions estimates for each of the modeled elements of the proposed project. As shown therein, no exceedances of the LSTs would occur, and impacts would be less than significant.

Impact AQ-III.d.

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

Less than significant.

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater-treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass-molding facilities. Rehabilitation includes none of these land uses. During the construction period, some limited odors may result from asphalt paving activities, which may be detectable by people immediately adjacent to work sites. Asphalt paving would occur for a time period of less than 1 week at each excavation site, and the

locations of paving activities would be distributed over several excavation sites along the entire alignment. Furthermore, SCAQMD Rule 402 prohibits the discharge of air contaminants that cause nuisance or annoyance to the public, including odors. SCAQMD maintains both a toll-free phone line (1-800-CUT-SMOG) and a web-based platform (http://www.aqmd.gov/contact/complaints) for reporting complaints related to air quality, including odors. Given the limited duration and location of asphalt paving, mandatory compliance with SCAQMD Rule 402, and ability for the public to report complaints to SCAQMD, rehabilitation would not create a significant level of objectionable odors. Impacts would be less than significant.

3.3.3.4 Mitigation Measures

No mitigation measures are required.

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3.4 Biological Resources

This section addresses sensitive biological resources, including special-status wildlife, riparian habitats and other natural communities, state and federal waters, migration corridors, native wildlife nursery sites, protected tree policies, and conservation plans, and how these resources may be affected by construction or implementation of nine separate improvements that are in turn supported by ten separate staging areas. These improvements are described in detail in Chapter 2, *Project Description*. The term *improvement site* refers to the limits of disturbance for each of the individual nine improvements, including actual improvement areas and staging areas, whereas the term *biological study area* (BSA) refers to the 100-foot buffer analyzed around every improvement site for biological resources.

3.4.1 Environmental Setting

3.4.1.1 Approach and Methodology

The approach to conducting biological resource studies involved both a literature review and a series of field investigations.

Literature Review

A literature review was conducted in June 2018 (and updated in November 2019) to evaluate the environmental setting of the BSAs and identify potential special-status biological resources that may be found on the site. Details of the literature review are included in Appendix C-1, Biological Technical Report. In addition, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA/NRCS 2018) was reviewed for the BSAs. The soil data were then evaluated for the potential to support rare vegetation communities, plants, and/or wildlife.

For this report, *special-status* species are those that are (1) listed, proposed for listing, or candidates for listing under the Federal Endangered Species Act (FESA) as threatened or endangered; (2) listed or candidates for listing under the California Environmental Species Act (CESA) as threatened or endangered; (3) a state fully protected species; (4) a California Department of Fish and Wildlife (CDFW) California Species of Special Concern; or (5) have a California Native Plant Society (CNPS) Rare Plant Rank of 1A, 1B, 2A, 2B, 3, or 4. In turn, *sensitive natural communities* refers to those communities that are protected by CDFW and tracked in the California Natural Diversity Database (CNDDB).

Field Investigation

General Habitat Assessment

The BSAs were defined as all areas in which work would occur, including road rights-of-way (ROWs) and staging areas, plus a 100-foot buffer. The 100-foot buffer was determined based upon the minimal limits of disturbance combined with the generally disturbed and developed habitat conditions around most of the improvement sites. This buffer distance was determined to be commensurate to the project potential impacts, which are mostly within existing road ROWs, except for the two tank improvement sites. Site visits were conducted in spring of 2018 and fall of 2019 by ICF biologists Paul Schwartz, Ryan Winkleman, and Sarah Horwath on April 23, April 25, May 2, June 1, 2018, and

November 6, 2019, between 8 a.m. and 4 p.m. Weather conditions during the various site visits consisted of temperatures ranging from 68 to 85 degrees Fahrenheit, winds ranging from 0 to 10 miles per hour, and generally clear skies with good visibility. The site visits focused on mapping vegetation and conducting habitat assessments for special-status wildlife species that could occur within the BSAs.

Each of the BSAs for the nine improvement sites and ten staging areas were evaluated through literature review and general site reconnaissance visits to determine the likelihood of occurrence of special-status species and vegetation types, as well as general biological resources that could potentially pose a constraint to the project through applicable laws and regulations. Focused surveys for determining presence/absence of special-status plants or wildlife were not performed during the site visits, because after consulting with the U.S. Fish and Wildlife Service, the quality of habitat was too poor to support the species (see Appendix C, Biology Report, for more information). Special-status parameters for wildlife included connectivity to documented and potentially occurring habitat, hydrology, access to the site, foraging and nesting habitat, the site's operational activities, and life history needs for each species.

Vegetation Mapping

Vegetation mapping was conducted in the field using aerial photos with an approximate scale of 1 inch to 300 feet, which were later transferred to a digital file using Google Earth and then converted to GIS shape files. Where possible, the vegetation mapping followed the classifications defined in *A Manual of California Vegetation* (Sawyer et al. 2009); however, *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) was also consulted for clarification, particularly with sensitive vegetation communities in the CNDDB, which uses Holland as its classification system.

For the purposes of this report, the general habitat assessment and vegetation mapping efforts are referred to cumulatively as reconnaissance surveys.

Jurisdictional Delineation

Jurisdictional delineations were conducted on November 7, 2018, by ICF regulatory specialist Meris Guerrero and ICF biologist Kristen Klinefelter and on November 6, 2019, by Kristen Klinefelter. The delineation area consisted of the proposed improvement footprints, plus a 50-foot-wide buffer. No delineation buffers were used for the staging areas; the delineation was limited to the staging area footprints. The delineation areas for both improvement sites and staging areas are cumulative referred to as the jurisdictional study area (JSA), with the improvement sites having a 50-foot buffer and staging areas having no buffer.

3.4.1.2 Biological Resources Setting

The overall project is located in the city of Malibu and in the unincorporated area of Topanga and consists of nine individual improvements at 15 sites, along with associated staging areas (see Figure 2-2 in Chapter 2, *Project Description*). These improvement sites and the improvement descriptions are discussed in detail in Chapter 2. The land within the BSAs is largely developed, consisting of mostly residential and commercial developments along PCH, and residential roads, with natural or semi-natural vegetation communities and habitats in surrounding areas including the Pacific Ocean shoreline and the Santa Monica Mountains National Recreation Area. As illustrated in Figures 2-2 through 2-11 in Chapter 2, the BSAs are generally located along the Malibu coastline, between Coastline Drive and Encinal Canyon Road, with additional areas in Fernwood. Improvement sites include portions of PCH, Encinal Canyon Road, Carbon Canyon Road, Carbon Mesa Road, and Coastline

Drive; two tank site on Horseshoe Drive and off Encinal Canyon Drive; and staging areas at Zuma Beach, Las Tunas Beach, along Saddle Peak Road, along Tuna Canyon Road, along Winter Canyon Road, along Topanga Canyon Road, at Topanga Beach, and along Encinal Canyon Road. Topographically, the BSAs are diverse. Average slopes of project sites range from approximately 0 to 20 percent inclines. Elevations within the BSAs range from approximately 6 to 1,918 feet above mean sea level, with the highest elevations occurring at the Applefield Lane Vacant Lot staging area site. The BSAs are vegetated with a mixture of scrub communities, woodlands, nonnative grassland, and riparian areas.

The following sections describe the existing conditions at each improvement site that may be subject to significant or less-than-significant impacts from project construction. Biological resources that are not present at any given improvement site or BSA, including at either improvement sites or staging areas, are not discussed in this section, but are discussed in Appendix C-1, Biological Technical Report. Table 3.4-1 lists the resources that are not present at these individual project sites and, therefore, not discussed further in this report for these improvement sites or staging areas.

Table 3.4-1. Improvement-Specific Resources Not Discussed in this Report

Improvement Site/ Staging Area	Resources Not Present at this Location and Not Discussed Further[1]	
	No Improvement Area Overlap	**No Biological Study Area Overlap[2]**
Carbon Canyon Road & Carbon Mesa Road Waterline Improvements	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Protected Trees, Habitat Conservation Plans
Coastline Drive 12-inch Waterline Improvements	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Protected Trees, Habitat Conservation Plans
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	Designated Critical Habitat, Essential Fish Habitat, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Habitat Conservation Plans
PCH & Topanga Beach Drive Waterline Improvements	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Emergency Source of Water Supply Connection (Las Virgenes Connection)	Designated Critical Habitat, Essential Fish Habitat, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Habitat Conservation Plans
Big Rock Bypass Improvements	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Upper Encinal Tank	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wetlands, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wetlands, Protected Trees, Habitat Conservation Plans

Improvement Site/ Staging Area	Resources Not Present at this Location and Not Discussed Further[1]	
	No Improvement Area Overlap	**No Biological Study Area Overlap[2]**
District 29 Creek Crossing Repairs		
Topanga Canyon Creek	Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Essential Fish Habitat, Protected Trees, Habitat Conservation Plans
Pena Canyon Creek	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Las Flores Canyon Creek	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Coal (Carbon) Canyon Creek	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans
Escondido Creek	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Corral Canyon Creek	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Protected Trees, Habitat Conservation Plans
Zuma Creek	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Habitat Conservation Plans
Fernwood Tank	Designated Critical Habitat, Essential Fish Habitat, Wildlife Movement, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
Staging Areas		
Applefield Lane Vacant Lot Staging Area	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans
Las Tunas County Beach Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Sensitive Natural Communities, Protected Trees, Habitat Conservation Plans
Owen Tank Site Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
Point Dume Tank Site Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans

Improvement Site/ Staging Area	Resources Not Present at this Location and Not Discussed Further[1]	
	No Improvement Area Overlap	No Biological Study Area Overlap[2]
RMD Winter Canyon Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
Sunset Mesa Tank Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
Topanga County Beach Staging Area	Designated Critical Habitat, Essential Fish Habitat, Protected Trees, Habitat Conservation Plans	Essential Fish Habitat, Protected Trees, Habitat Conservation Plans
Topanga Field Yard Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
Zuma County Beach Staging Area	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans
cc of Encinal Canyon Road & PCH	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wildlife Movement, Protected Trees, Habitat Conservation Plans	Designated Critical Habitat, Essential Fish Habitat, Sensitive Natural Communities, Wetlands, Wildlife Movement, Protected Trees, Habitat Conservation Plans

[1] For more information, refer to Appendix C-1, Biological Technical Report.

[2] The Biological Study Area encompasses a 100-foot buffer around each improvement or staging area.

Carbon Canyon Road and Carbon Mesa Road Waterline Improvements Site

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvements site is located just north of PCH, along Carbon Canyon Road, which turns into Carbon Mesa Road between Sweetwater Canyon Drive to the west and Rambla Vista to the east. This improvement would use the Topanga Field Yard staging area (Figure 2-3 in Chapter 2, *Project Description*).

Special-status Species

No special-status species were observed within the BSA during any of the general 2018 field surveys. There is nesting habitat for white-tailed kite (*Elanus leucurus*) within the 100-foot BSA for the Carbon Canyon Road and Carbon Mesa Road Waterline Improvement. Both this improvement site's BSA and the Topanga Field Yard staging area BSA have moderate potentials to support Southern California legless lizard (*Anniella stebbinsi*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

Riparian Habitat and Other Sensitive Natural Communities

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvements site has southern riparian forest and southern sycamore alder riparian woodland in the BSA (Figure 6 in Appendix C-1, Biological Technical Report).

Wetlands

Two features within the JSA (Streams 8 and 9, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) were identified and mapped for potential federal, state, California Coastal Commission (CCC), and CDFW jurisdiction. Approximately 0.15 acre (121 linear feet) of non-wetland waters of the U.S. may be subject to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CCC regulatory jurisdiction. Additionally, approximately 0.20 acre (121 linear feet) of streambed occur within the JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvements site has potential for both avian and mammalian movement to occur within the BSA boundaries, primarily within Carbon Canyon, but also within a tributary drainage that runs through the improvement from west to east. When water is present, Carbon Canyon may also provide a viable movement corridor for amphibians. There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvements site BSA is located within the Malibu Local Coastal Plan (LCP) (Figure 3 in Appendix C-1, Biological Technical Report). The areas along the eastern side of the southern two-thirds of Carbon Canyon Road, which are in the BSA, are designated as Environmentally Sensitive Habitat Areas (ESHAs) under the Malibu LCP. These areas are composed of a variety of natural vegetation communities including California sycamore woodland, California sagebrush scrub/laurel sumac scrub, disturbed California sagebrush scrub/laurel sumac scrub, red willow thicket, and disturbed red willow thicket. The Topanga Field Yard staging area and its BSA are located within the Los Angeles County Santa Monica Mountains (SMM) LCP and the Topanga Field Yard staging area BSA falls into areas that are categorized as Significant Environmental Resource Areas (SERAs), including the H1 Habitat Buffer and as the H2 Habitat High Scrutiny Sub-Area (see Section 3.4.2 for a definitions of these categories).

Coastline Drive 12-inch Waterline Improvements Site

The Coastline Drive 12-inch Waterline Improvements site is located just north of PCH along the stretch of Coastline Drive from Castlerock Road to the west to PCH to the southeast. This improvement would use the Topanga Field Yard and/or Sunset Mesa Tank staging areas (Figure 2-4 in Chapter 2).

Special-status Species

No special-status species were observed at this site during any of the 2018 reconnaissance surveys. There is marginal foraging habitat for western mastiff bat within the woodland/scrub habitat in the BSA.

Wetlands

The Coastline Drive 12-inch Waterline Improvements site JSA does not support any aquatic resources potentially subject to USACE, RWQCB, CCC, or CDFW jurisdiction.

Wildlife Movement

The Coastline Drive 12-inch Waterline Improvements BSA is unlikely to be used for wildlife movement within its boundaries. There may be a small potential for mammals to move around in the scrub/woodland habitat within the BSA, but since this area is enclosed on either end by houses, the likelihood of it actually being used for formal migration purposes is low. There is no wildlife movement potential within the Topanga Field Yard staging area BSA because it is a developed lot, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The Coastline Drive 12-inch Waterline Improvements, Topanga Field Yard Staging Area, and Sunset Mesa Tank Staging Area sites are all located within the SMM LCP (Figure 3 in Appendix C-1, Biological Technical Report). A small portion of the improvement site's BSA is located within the Pacific Palisades area, which does not have a Certified LCP. Because this area is still within the Coastal Zone, permitting authority falls to the CCC. None of these improvement sites, staging area sites, or BSAs fall into areas that would be categorized as SERAs.

District 29 Creek Crossing Repairs Sites

The District 29 Creek Crossing Repairs sites are located at various independent locations along PCH. These include Topanga Canyon Creek, Pena Canyon Creek, Las Flores Canyon Creek, Coal (Carbon) Canyon Creek, Escondido Creek, Corral Canyon Creek, and Zuma Creek. Las Tunas County Beach, Topanga Field Yard, and Zuma County Beach would be used as staging areas for construction for these repair sites (Figure 2-5 in Chapter 2).

Special-status Species

One special-status species was observed outside of the Topanga Canyon Creek BSA during 2018 reconnaissance surveys: black skimmer (*Rhynchops niger*). The bird was located on the beach near the improvement area; this species typically nests on islands, outside the improvement area. There is designated Critical Habitat for tidewater goby (*Eucyclobius newberryi*) within the Topanga Canyon Creek BSA, as well as designated Critical Habitat for southern California steelhead (*Oncorhynchus mykiss*) adjacent to the BSA. There is designated Groundfish Essential Fish Habitat (EFH) and Coastal Pelagics EFH in the Las Flores Canyon Creek, Escondido Creek, and Corral Canyon Creek areas, as well as EFH for both within the BSA for Pena Canyon Creek (Figure 6 in Appendix C-1, Biological Technical Report).

Riparian Habitat and Other Sensitive Natural Communities

The District 29 Creek Crossing Repairs sites have sensitive natural communities within the improvement areas for Topanga Canyon Creek (coastal lagoon, southern California steelhead stream), Las Flores Canyon Creek (coastal lagoon), Escondido Creek (coastal lagoon), Corral Canyon Creek (coastal lagoon, southern coastal salt marsh), Pena Canyon Creek (southern riparian forest, southern sycamore alder riparian woodland), Las Flores Canyon Creek (southern coastal salt marsh in addition to coastal lagoon), Escondido Creek (southern coastal salt marsh in addition to coastal lagoon), and Zuma Creek (southern riparian forest) (Figure 6 in Appendix C-1, Biological Technical Report).

Wetlands

Six features (Streams 3, 4, 7, 8, 10, and 11, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) within the JSA were identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.92 acre (1,582 linear feet) of non-wetland waters of the U.S. and 0.05 acre of wetland waters of the U.S. may be subject to USACE, RWQCB, and CCC regulatory jurisdiction. Additionally, approximately 1.44 acres (1,769 linear feet) of streambed and 0.50 acre of associated riparian habitat occur within the JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

All seven of the District 29 Creek Crossing Repairs sites likely support both avian and mammalian movement because they are all associated with canyon mouths, where wildlife can pass through the individual sites within respective canyons. Several of these sites had water in them as well at the time of vegetation mapping, including Corral Canyon Creek, Escondido Creek, Las Flores Creek, and Topanga Canyon Creek and thus could support at minimum local movement of aquatic species either upstream (inland) or downstream (Pacific Ocean). All of these are shown on U.S. Geological Survey (USGS) quadrangles as intermittent creeks throughout their entire lengths, indicating that they could support movements of aquatic species when water flows from far upstream. The Topanga Canyon Creek site had the most substantial amount of water in it at the time of the 2018 vegetation mapping and at approximately 9 miles long, is also by far the longest of the wet waterways. The Las Tunas County Beach staging area BSA has marginal potential for wildlife movement. A concrete trapezoidal channel runs underneath PCH on the eastern side of the BSA; this channel could provide a safe movement corridor for mammals to get from the hills to the north to the shoreline. There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The Zuma Creek BSA has a single potentially Protected Tree as defined under the Native Tree Protection Ordinance of the Malibu LCP: a California sycamore (*Platanus racemosa*) present along the edge of PCH. A formal analysis by an arborist would be necessary to determine if this tree qualifies for protection under the ordinance. Of the seven sites that comprise the District 29 Creek Crossing Repairs sites, Pena Canyon Creek, Las Flores Canyon Creek, Coal (Carbon) Canyon Creek, Escondido Creek, Corral Canyon Creek, and Zuma Creek and all of their BSAs are located within the Malibu LCP (Figure 3 in Appendix C-1, Biological Technical Report). The Topanga Canyon Creek site BSA is located within the SMM LCP. Within the Malibu LCP, the following sites contain areas qualifying as ESHAs: Las Flores Canyon Creek BSA (red willow thicket and saltgrass/cattail marsh in the creek), Corral Canyon Creek BSA (California sagebrush scrub/laurel sumac scrub, red willow thicket, and saltgrass/cattail marsh in the creek), Escondido Creek BSA (fourwing saltbush scrub and saltgrass/cattail marsh in the creek), and Zuma Creek BSA (California sycamore woodland and red willow thicket). Within the SMM LCP, the Topanga Canyon Creek BSA falls into areas categorized as SERAs, including H1 Habitat and the H1 Habitat Buffer.

The Las Tunas County Beach and Zuma Beach staging areas and their BSAs are located within the Malibu LCP, and the Topanga Field Yard staging area and its BSA are located within the SMM LCP. The Topanga Field Yard Staging Area BSA contains both the H1 Habitat Buffer and the H2 Habitat High Scrutiny Sub-Area.

Fernwood Tank Improvement Site

The Fernwood Tank improvement site is the northernmost of the nine improvement sites, located well up Topanga Canyon off Tuna Canyon Road in the Santa Monica Mountains. The site is located at 19837 Horseshoe Drive, Topanga, Los Angeles County. It would use the Topanga Field Yard, Applefield Lane Vacant Lot, and Owen Tank Site as staging areas for construction (Figure 2-6 in Chapter 2).

Special-status Species

No special-status species were observed at this site during the 2018 field reconnaissance surveys. There is moderate potential for the site to support Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, and western red bat.

Riparian Habitat and Other Sensitive Natural Communities

The Fernwood Tank site and Applefield Lane Vacant Lot site both have southern coast live oak riparian forest (Figure 6 in Appendix C-1, Biological Technical Report). The oak woodland in the Fernwood Tank site is composed of individual trees on the improvement site that together with the surrounding oaks outside of the boundaries create an oak woodland habitat.

Wetlands

The Fernwood Tank JSA does not support any aquatic resources potentially subject to USACE, RWQCB, CCC, or CDFW jurisdiction.

Wildlife Movement

There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon. The Applefield Lane Vacant Lot site sits at a high point separating Little Las Flores Canyon and Dix Canyon on either side of it. The open ground of the site may lend itself to wildlife movement across the site between canyons, but likely not to any great extent due to the residential development in the general surrounding area.

Local Policies

The Fernwood Tank site contains four coast live oaks (*Quercus agrifolia*) that would potentially be considered protected under the criteria of a Coastal Development Permit – Oak Tree (CDP-OT), as described in the SMM LCP, as well as the Los Angeles County oak tree ordinance. An arborist would be required to determine whether the trees meet the qualifications that are necessary to be protected under this development permit. Additional oaks within the BSA are unlikely to be affected by the development of this improvement. The improvement BSA is located within the SMM LCP, but not within any areas that are designated as SERAs (Figure 3 in Appendix C-1, Biological Technical Report).

All three designated staging areas—the Applefield Lane Vacant Lot, the Owen Tank Site, and the Topanga Field Yard—are located within the SMM LCP. The Applefield Lane Vacant Lot BSA is just barely located within an area defined by the SMM LCP as a SERA (the H1 Habitat Buffer), and the Topanga Field Yard BSA contains both the H1 Habitat Buffer and the H2 Habitat High Scrutiny Sub-Area.

PCH 8-inch Waterline Improvements Site (Zumirez Drive to Escondido Beach Road)

The PCH 8-inch Waterline Improvements site (Zumirez Drive to Escondido Beach Road) is located along PCH. It will use the Topanga Field Yard, Zuma County Beach, RMD Winter Canyon Yard, and Point Dume Tank Site as staging areas for construction (Figure 2-7 in Chapter 2, *Project Description*).

Special-status Species

No special-status species were observed at this site during any of the 2018 field surveys. There is moderate potential for the site to support Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, and western red bat. There is Groundfish EFH and Coastal Pelagics EFH in both the improvement site and the BSA, and there is designated Critical Habitat for western snowy plover (*Charadrius nivosus* ssp. *nivosus*) within the Zuma County Beach BSA (Figure 6 in Appendix C-1, Biological Technical Report).

Riparian Habitat and Other Sensitive Natural Communities

The PCH 8-inch Waterline Improvements site (Zumirez Drive to Escondido Beach Road) contains southern coast live oak riparian forest and coastal lagoon; the BSA contains both of these communities, as well as California walnut woodland and southern coastal salt marsh (Figure 6 in Appendix C-1, Biological Technical Report).

Wetlands

Three features (Streams 11, 12, and 13, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) within the JSA were identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.19 acre (636 linear feet) of non-wetland waters of the U.S. may be subject to USACE, RWQCB, and CCC regulatory jurisdiction. Additionally, approximately 0.26 acre (636 linear feet) of streambed and 0.11 acre of associated riparian habitat occur within the JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

The PCH 8-inch Waterline Improvements site (Zumirez Drive to Escondido Beach Road) provides several opportunities for wildlife movement where creeks cross underneath PCH, providing opportunities for both mammals and birds in particular to move north and south of the improvement site. There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The PCH 8-inch Waterline Improvements site (Zumirez Drive to Escondido Beach Road) and its BSA contain numerous trees that may qualify as protected under the Malibu LCP Native Tree Protection Ordinance, pending verification by an arborist. These include southern California black walnut (*Juglans californica californica*), coast live oak, toyon (*Heteromeles arbutifolia*), and California sycamore. The improvement site and its BSA are both located within the Malibu LCP, and the BSA contains several areas that are designated as ESHAs under this LCP, including areas categorized as coast live oak woodland, disturbed California sagebrush scrub/laurel sumac scrub, fourwing saltbush scrub, and saltgrass/cattail marsh.

The Zuma County Beach, RMD Winter Canyon Yard, and Point Dume Tank Site staging areas and their BSAs are all located within the Malibu LCP, and the Topanga Field Yard staging area is located within the SMM LCP (Figure 3 in Appendix C-1, Biological Technical Report). The Topanga Field Yard BSA

contains SERAs under the SMM LCP that are characterized as the H1 Habitat Buffer and the H2 Habitat High Scrutiny Sub-Area.

PCH and Topanga Beach Drive Waterline Improvements Sites

The PCH and Topanga Beach Drive Waterline Improvements sites are located along PCH and consist of three segments along a total of approximately 8,330 feet. Las Tunas County Beach, Topanga County Beach, and the Topanga Field Yard would be used as staging areas for construction (Figure 2-8a in Chapter 2).

Special-status Species

No special-status species were observed at this site during the 2018 field surveys. The Segment 1 site has a moderate potential to support nesting white-tailed kite. The Segment 2 site has a moderate potential to support arroyo chub (*Gila orcuttii*) and southwestern pond turtle (*Emys marmorata*). All three segment sites could support Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, western red bat, and San Diego desert woodrat. The Segment 2 BSA contains both Groundfish EFH and Coastal Pelagics EFH (Figure 6 in Appendix C-1, Biological Technical Report). The Topanga County Beach staging area BSA contains designated Critical Habitat for tidewater goby, as well as both Groundfish EFH and Coastal Pelagics EFH.

Riparian Habitat and Other Sensitive Natural Communities

The Segment 1 BSA contains southern riparian forest and southern sycamore alder riparian woodland, and the Segment 2 BSA contains coastal lagoon and southern coastal salt marsh (Figure 6 in Appendix C-1, Biological Technical Report). The Topanga County Beach staging area BSA contains coastal lagoon and southern California steelhead stream.

Wetlands

Two features within the BSA, Stream 5 and Pacific Ocean Area 2, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report, were identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.06 acre (178 linear feet) of waters of the U.S., consisting of 0.03 acre of non-wetland navigable waters (i.e., Pacific Ocean) and 0.03 acre of non-wetland stream, are potentially subject to USACE, RWQCB, and CCC regulatory jurisdiction. Approximately 0.06 acre (190 linear feet) of streambed and 0.04 acre of associated riparian habitat within the BSA also would be subject to CDFW jurisdiction.

Wildlife Movement

The PCH and Topanga Beach Drive Waterline Improvements sites provide several opportunities for wildlife movement. Each of the three segments sites has at least one drainage running underneath it, each of which likely provides opportunities for both mammals and birds, in particular, to move north and south of the improvement sites. The Las Tunas County Beach staging area BSA has marginal potential for wildlife movement. A concrete trapezoidal channel runs underneath PCH on the eastern side of the BSA; this channel likely provides a movement corridor for mammals between the hills to the north and the shoreline. Likewise, the Topanga County Beach Staging Area BSA encompasses the mouth of Topanga Canyon Creek, which provides a movement opportunity for birds, mammals, and aquatic species to move up and down the canyon. There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The PCH and Topanga Beach Drive Waterline Improvements sites and their BSAs are located within the Malibu LCP (Figure 3 in Appendix C-1, Biological Technical Report). Of the three separate sites within this improvement, the BSAs for the middle site (PCH West of Rambla Pacifico Street) and easternmost (PCH West of Topanga Beach Drive) site slightly encroach into designated ESHAs that are characterized as California sycamore woodland, disturbed California sagebrush scrub/laurel sumac scrub, and red willow thicket. The Las Tunas County Beach staging area BSA is located within the Malibu LCP, and the Topanga County Beach staging area and Topanga Field Yard staging area BSAs are located within the SMM LCP, with the far western end of the Topanga County Beach staging area BSA encroaching the Malibu LCP as well. The Topanga County Beach staging area BSA is within designated SERAs under the SMM LCP, including the H1 Habitat Buffer, and the Topanga Field Yard staging area BSA is within SERAs categorized as the H1 Habitat Buffer and as the H2 Habitat High Scrutiny Sub-Area.

Emergency Source of Water Supply Connection (Las Virgenes Connection) Site

The Emergency Source of Water Supply Connection (Las Virgenes Connection) site is on the western end of the overall project area. It is located along Encinal Canyon Road, north of PCH, and would use Zuma County Beach, the Northwest Intersection of Encinal Canyon Road and PCH, and/or Topanga Field Yard as staging areas for construction (Figure 2-9 in Chapter 2, *Project Description*).

Special-status Species

No special-status species were observed at this site during the 2018 field reconnaissance surveys. There is moderate potential for the site to support white-tailed kite nesting, Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, western red bat, and San Diego desert woodrat. Designated Critical Habitat for western snowy plover lies within the Zuma County Beach BSA (Figure 6 in Appendix C-1, Biological Technical Report).

Riparian Habitat and Other Sensitive Natural Communities

The Emergency Source of Water Supply Connection site has California walnut woodland, southern coast live oak riparian forest, and southern sycamore alder riparian woodland in its boundaries (Figure 6 in Appendix C-1, Biological Technical Report); the BSA has southern coast live oak riparian forest, southern riparian forest, and southern sycamore alder riparian woodland.

Wetlands

Two features (Streams 1 and 2, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) within the JSA were identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.08 acre (530 linear feet) of non-wetland waters of the U.S. "may be" subject to USACE, RWQCB, and CCC regulatory jurisdiction. Additionally, approximately 0.15 acre (530 linear feet) of streambed occur within the JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

The BSA for the Emergency Source of Water Supply Connection (Las Virgenes Connection) does not provide wildlife movement opportunities. The site runs along a mountain road with steep slopes both above and below it, and generally a narrow shoulder on either side. Encinal Canyon provides good opportunities for movement, but the canyon is wide and deep with a very limited connection between any work that would occur on Encinal Canyon Road and any wildlife movement within the canyon.

The only location where the site is near likely movement corridors is where the road crosses roughly parallel over and divides the canyon between upstream and downstream reaches, approximately 900 feet south of the site's northern terminus.

Local Policies

The Emergency Source of Water Supply Connection (Las Virgenes Connection) BSA contains numerous potentially Protected Trees under the Native Tree Protection Ordinance, including toyon, California sycamore, coast live oak, and southern California black walnut. Both the improvement site and BSA are mostly located within the Malibu LCP, but the northernmost limits of both the improvement site and BSA are located within the SMM LCP (Figure 3 in Appendix C-1, Biological Technical Report). The site and BSA both contain areas that are designated as ESHAs under the Malibu LCP, including areas mapped as California sagebrush scrub, California sagebrush scrub/laurel sumac scrub, California sycamore woodland, California walnut grove, coast live oak woodland, and laurel sumac scrub. The northernmost portion of the site and its BSA also contain areas that are designated as SERAs under the SMM LCP, including H1 Habitat and the H1 Habitat Buffer. The Zuma Beach and Northwest Intersection of Encinal Canyon Road and PCH staging areas and their BSAs are located within the Malibu LCP and are not designated as sensitive areas.

Big Rock Bypass Improvements Site

The Big Rock Bypass Improvements site is located along PCH between Big Rock Drive to the west and Tuna Canyon Road to the east. It will use Las Tunas County Beach, Topanga County Beach, and the Topanga Field Yard as staging areas for construction (Figure 2-10 in Chapter 2).

Special-status Species

No special-status species were observed at this site during the 2018 field surveys. There is marginal nesting habitat for white-tailed kite within the 100-foot BSA for the Big Rock Bypass Improvements site, which also has a moderate potential to support Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, western red bat, and San Diego desert woodrat. There is a moderate potential for arroyo chub, Southern California legless lizard, coastal whiptail, southwestern pond turtle, coast horned lizard, western mastiff bat, and San Diego desert woodrat to occur at the Topanga County Beach staging area BSA, a moderate potential for Southern California legless lizard to occur at Las Tunas County Beach staging area BSA, and a moderate potential for Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, western red bat, and San Diego desert woodrat to occur at the Topanga Field Yard BSA.

The Big Rock Bypass Improvements site BSA and Las Tunas County Beach staging area sites contain both Groundfish EFH and Coastal Pelagics EFH (Figure 6 in Appendix C-1, Biological Technical Report). There is designated Critical Habitat for tidewater goby within the 100-foot BSA for the Topanga County Beach staging area.

Riparian Habitat and Other Sensitive Natural Communities

The Big Rock Bypass Improvements site BSA contains southern riparian forest and southern sycamore alder riparian woodland, and the Topanga County Beach staging area BSA contains coastal lagoon and southern California steelhead stream habitats (Figure 6 in Appendix C-1, Biological Technical Report).

Wetlands

Two features (Stream 6 and Pacific Ocean Area 1, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) within the JSA were identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.46 acre (65 linear feet) of waters of the U.S., consisting of 0.46 acre of non-wetland navigable waters (i.e., Pacific Ocean) and less than 0.01 acre of non-wetland stream, may be subject to USACE, RWQCB, and CCC regulatory jurisdiction. Additionally, less than 0.01 acre (65 linear feet) of streambed occurs within the jurisdictional JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

Both the Big Rock Bypass Improvements site BSA and Las Tunas County Beach staging area BSA, which overlap with each other, have marginal potential for wildlife movement. A concrete trapezoidal channel runs underneath PCH on the eastern side of these BSAs; this channel could provide a movement corridor for mammals to get from the hills to the north to the shoreline. Likewise, the Topanga County Beach staging area BSA encompasses the mouth of Topanga Canyon Creek, which provides a movement opportunity for birds, mammals, and aquatic species to move up and down the canyon. There is no wildlife movement potential within the Topanga Field Yard staging area BSA, but wildlife could move in areas just adjacent to it within the wider Topanga Canyon.

Local Policies

The Big Rock Bypass Improvements BSA is located within the Malibu LCP, as is the Las Tunas County Beach staging area BSA (Figure 3 in Appendix C-1, Biological Technical Report). The Topanga County Beach staging area and Topanga Field Yard staging area BSAs are located within the SMM LCP, with the far western end of the Topanga County Beach staging area BSA falling into the Malibu LCP as well. The Topanga County Beach staging area BSA falls into areas designated as SERAs under the SMM LCP, including the 100-foot H1 Habitat Buffer, whereas the Topanga Field Yard staging area BSA falls into SERAs that are categorized as the H1 Habitat Buffer and as the H2 Habitat High Scrutiny Sub-Area.

Upper Encinal Tank Improvement Site

The Upper Encinal Tank Improvement site is the westernmost of the nine improvements. It is located on Vista del Preseas, north of PCH. It would use Zuma County Beach, the Northwest Intersection of Encinal Canyon Road and PCH, or Topanga Field Yard as staging areas for construction (Figure 2-11 in Chapter 2).

Special-status Species

No special-status species were observed at this site during the 2019 field survey. As a result of the Woolsey Fire, the BSA is generally highly disturbed and contains a widespread weedy groundcover between the remnants of native vegetation that remain. Although there is marginal nesting habitat for birds in general, the habitat is so degraded that the BSA is unlikely to be used in a nursery capacity until the site recovers from the fire damage. Special-status species are not expected to occur within the Upper Encinal Tank Improvements BSA. There is a moderate potential for Southern California legless lizard, coastal whiptail, coast horned lizard, western mastiff bat, western red bat, and San Diego desert woodrat to occur at the Topanga Field Yard BSA. There is designated Critical Habitat for western snowy plover within the Zuma County Beach BSA (Figure 6 in Appendix C-1, Biological Technical Report).

Wetlands

No features were mapped within the Upper Encinal Tank Improvements JSA. One feature mapped within the JSA for the Northwest Intersection of Encinal Canyon Road and PCH staging area (Stream 15, as described and illustrated in Appendix C-2, Jurisdictional Delineation Report) was identified and mapped for potential federal, state, CCC, and CDFW jurisdiction. Approximately 0.004 acre (48.33 linear feet) of non-wetland waters of the U.S. may be subject to USACE, RWQCB, and CCC regulatory jurisdiction. Additionally, approximately 0.011 acre (48.33 linear feet) of streambed occur within the staging area JSA and would be subject to CDFW jurisdiction.

Wildlife Movement

There are limited opportunities for wildlife movement within the Upper Encinal Tank Improvement BSA. The open hillside surrounding the site provides a marginal movement corridor, but is highly degraded and mostly overtaken by weeds since the 2018 Woolsey Fire. The unnamed drainage to the north of the improvement area, within the BSA, would provide more protected movement opportunities for wildlife to get into or out of Lachusa Canyon to the west (outside of the BSA). Although a drainage feature is present within the boundaries of the northwest intersection of Northwest Intersection of Encinal Canyon Road and PCH staging area on the north side of Encinal Canyon Road, the feature has a vertical rise of several feet, before going underground into a culvert and on the south side of PCH, it outlets into a small drainage going straight onto the beach, effectively eliminating its utility as a movement corridor.

Local Policies

The Northwest Intersection of Encinal Canyon Road and PCH staging area BSA contains a single potentially protected tree under the Native Tree Protection Ordinance, a California sycamore that is highly unlikely to be affected due to its proximity to residential housing on the hillside above the staging area. The Upper Encinal Tank Improvement BSA is located within the Malibu LCP, as are the Zuma Beach and Northwest Intersection of Encinal Canyon Road and PCH staging area BSAs (Figure 3 in Appendix C-1, Biological Technical Report). The Upper Encinal Tank Improvements BSA contains areas designated as ESHAs in the surrounding area outside of the paved road and work area, although the direct improvement footprint has no designation.

3.4.2 Regulatory Setting

This section describes the plans, policies, and regulations related to biological resources that are applicable to the proposed project.

3.4.2.1 Federal Regulations

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 United States Code Section 668) provides protection for both the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting the take of either of these species, including their parts, nests, or eggs. The BGEPA defines take as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" any bald or golden eagle. The BGEPA is administered by the U.S. Fish and Wildlife Service, and limited take authorizations are granted for qualifying activities. Persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner any

bald eagle… [or golden eagle], alive or dead, or any part, nest, or egg thereof" without prior approval are subject to criminal penalties.

Executive Order 11990 Protection of Wetlands

This Executive Order established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On federally funded projects, impacts on wetlands must be identified and alternatives that avoid wetlands must be considered. If impacts on wetlands cannot be avoided, all practicable minimization measures must be included.

Executive Order 13112 Invasive Species

Executive Order 13112 requires federal agencies to combat the introduction or spread of invasive species in the United States. Federal Highway Administration guidance issued on August 10, 1999, directs the use of a state noxious weed list to identify the invasive plants that must be considered as part of the National Environmental Protection Act (NEPA) analysis for a proposed project. Under the executive order, federal agencies cannot authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive plants and animals in the U.S. or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

Federal Endangered Species Act of 1973

The FESA provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The FESA regulates federally listed endangered or threatened wildlife and plant species, proposed listed species, and critical habitat. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future.

Federal Noxious Weed Act of 1974

The Federal Noxious Weed Act of 1974 gave the Secretary of Agriculture the authority to designate plants as noxious weeds, and to regulate and prohibit any interstate or foreign commerce that involved the movement of those species without a permit. The Secretary of Agriculture was also given authority to inspect, seize, and destroy products or to quarantine areas to prevent the spread of noxious weeds.

Federal Water Pollution Control Act (Clean Water Act)

The federal Clean Water Act (CWA) of 1977, which amended the federal Water Pollution Control Act of 1972, establishes the basic structure for regulating discharges of pollutants into waters of the U.S. (not including groundwater). The CWA delegates authority to the U.S. Environmental Protection Agency to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System permit is obtained and implemented within compliance. The discharge (temporary or permanent) of dredged or fill material into waters of the U.S., including wetlands, typically requires authorization from the UUSACE, pursuant to Section 404 of the CWA.

In addition, the CWA requires the states to adopt water quality standards for receiving water bodies and to have those standards approved by the U.S. Environmental Protection Agency (EPA). Under Section 401 of the CWA, any project activities that involve a discharge to waters of the U.S. must

comply with the applicable provisions of the Clean Water Act. The RWQCB regulates, at the state level, all activities that are regulated at the federal level by the USACE. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses.

Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species, as well as any part, egg, or nest of such bird. Migratory birds are not necessarily federally listed as endangered or threatened birds under the FESA. The MBTA makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird or attempt such actions, except as permitted by regulation.

3.4.2.2 State Regulations

California Coastal Act

The California Coastal Act was enacted in 1976 to outline the duties of the CCC and to describe development standards and requirements within the Coastal Zone. One of the tenets of the Coastal Act was to encourage local governments within the Coastal Zone to write and adopt their LCPs, which would in turn describe sensitive coastal resources for conservation (generally referred to as ESHAs). Each LCP must be certified by the CCC before decision-making authority is formally relinquished to that local government. LCPs are also described in Section 3.4.2.3, Local Regulations and Ordinances. In the Coastal Zone, the CCC is also responsible for determining the presence of wetlands. CCC only requires the presence of one criterion (e.g., wetland hydrology, hydric soils, or hydrophytic vegetation) for an area to qualify as a wetland as defined in the California Code of Regulations (14 California Code of Regulations [CCR] 13577). Determining whether an area has wetland hydrology, hydric soils, or hydrophyte vegetation follows the methodologies set forth in the USACE Arid West Regional Supplement (USACE 2008).

California Endangered Species Act

The CESA prohibits take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in the California Fish and Game Code (CFGC) Section 86 as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful projects. CDFW administers CESA and authorizes take through permits issued under CFGC Section 2081, or through a consistency determination issued under Section 2080.1 for projects with federal take authorizations.

California Environmental Quality Act (Public Resources Code Sections 21000–21177, State CEQA Guidelines Sections 15000–15387)

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a discretionary permit by a public agency. The CEQA analysis includes review of species that are listed under the FESA or CESA or are designated as sensitive. Sensitive species include, but are not limited to, wildlife Species of Special Concern (SSC) listed by the CDFW and plant species in the CNPS California Rare Plant Rank (CRPR) List 1A (presumed extinct), List 1B (rare, threatened, or

endangered in California and elsewhere; eligible for state listing), or List 2 (rare, threatened, or endangered in California but more common elsewhere; eligible for state listing).

California Fish and Game Code Sections 1600–1616, 3503, 3503.5, 3505, 3511, 3513, 3800, 3801.6, 4000, 4002, and 4150

Pursuant CFGC Sections 1600–1616, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The California Fish and Game Commission defines a *stream* (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The commission's definition of *lake* includes "natural lakes or man-made reservoirs" (14 CCR 1.56). CDFW limits of jurisdiction include the maximum extents of the uppermost bank-to-bank distance or riparian vegetation dripline. CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife.

The State of California has incorporated the protection of birds into CFGC Sections 3503, 3503.5, 3505, 3511, 3513, 3800, and 3801.6, and the protection of mammals into CFGC Sections 4000, 4002, and 4150.

3.4.2.3 Local Regulations and Ordinances

Los Angeles County

Significant Ecological Areas

Significant Ecological Areas (SEA) are officially designated areas within Los Angeles County determined to have irreplaceable biological resources, as shown on Figure 9.3, Significant Ecological Areas and Coastal Resource Areas Policy Map, of the Los Angeles County General Plan (County of Los Angeles Department of Regional Planning 2015). The SEA Ordinance establishes the permitting, design standards, and review process for development within SEAs, while balancing preservation of Los Angeles County's natural biodiversity with private property rights. Los Angeles County considers the biological resources in the Santa Catalina Island and SMM Coastal Zones to be of significance, and the management and review of biological resources in the Coastal Zones (referred to as Coastal Resource Areas [CRA]) differs from the countywide SEA regulatory program. Biological resource management in the SMM Coastal Zone is currently implemented through the SMM LCP, and management of CRAs is implemented through the California Coastal Commission. Thus, there are no SEAs under the review jurisdiction of Los Angeles County within the BSAs.

Oak Tree Permits

As specified in the Los Angeles County Code, Title 22, Division 1, Chapter 22.56, Part 16, the oak tree permit was established to preserve and maintain healthy oak trees, a significant environmental resources in Los Angeles County, in the development process (Los Angeles County Code 22.56.2050). The code states that, "Except as otherwise provided in Section 22.56.2070, a person shall not cut, destroy, remove, relocate, inflict damage or encroach into a protected zone of any tree of the oak genus…" that meets certain size or planting requirements, as detailed in the original text of the code, which also contains additional definitions and exemptions. Portions of the project sites within

unincorporated Los Angeles County may require Oak Tree Permits if oak species are to be removed or damaged.

Local Coastal Programs

The improvement sites fall within the boundaries of two different LCPs. LCPs are required under the California Coastal Act to be prepared for each local government lying in whole or in part within the coastal zone. The project areas fall within the boundaries of the Malibu LCP (City of Malibu 2002a and City of Malibu 2002b) and the SMM LCP (County of Los Angeles Department of Regional Planning 2014). The BSA for the Coastline Drive site encroaches into the boundaries of Pacific Palisades, which falls within the jurisdiction of the City of Los Angeles and does not have a certified LCP (California Coastal Commission 2017), but the project area itself is still outside of the Pacific Palisades boundary.

Generally, development activity, as defined by the California Coastal Act, occurring within the Coastal Zone requires a Coastal Development Permit from the Coastal Commission or local government with a certified LCP. *Development* includes, but is not limited to, demolition, construction, replacement, or change to size of a structure; grading, removal, or placement of fills or other materials, clearing of vegetation in sensitive habitat; impeding access to beach or public trails; and repair or maintenance activities that could result in environmental impacts. Thus, the project may require a Coastal Development Permit from the Malibu LCP and SMM LCP.

The Malibu LCP designates a variety of ESHAs, which include but are not limited to the following:

- Entire canyon habitats, riparian corridors, coastal sage scrub, chaparral, and woodlands in undeveloped areas
- Riparian corridors in developed areas
- Coastal dunes and bluff face areas
- Valuable marine resource areas, including kelp forests, intertidal areas, and near-shore, shallow-water fish habitats

In contrast, the SMM LCP designates SERAs in the following four categories:

- The **H1 Habitat** category consists of habitats of highest biological significance, rarity, and sensitivity.
- The **H2 Habitat** category consists of habitats of high biological significance, rarity, and sensitivity that are important for the ecological vitality and diversity of the Santa Monica Mountains Mediterranean Ecosystem.
- The **H2 "High Scrutiny" Habitat** category is a subcategory of H2 Habitat, which comprises extra-sensitive H2 Habitat species/habitats that should be given avoidance priority over other H2 habitat.
- The **H3 Habitat** category consists of areas that would otherwise be designated as H2 Habitat, but the native vegetation communities have been significantly disturbed or removed as part of lawfully established development.

These two LCPs are described in more detail in Appendix C-1, Biological Technical Report.

3.4.3 Impacts and Mitigation

3.4.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- 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.
- Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc.), through direct removal, filling, hydrological interruption, or other means.
- Substantial interference 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan

3.4.3.2 Impacts

Impact BIO-IV.a.

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 CDFW or USFWS?

Less than significant with mitigation.

Construction

Construction of the nine improvements would generally be confined to the existing ROWs, which are mostly paved and developed. Most of the construction would take place within trenches in PCH or other paved roadways, many of which are in residential areas or otherwise experience moderate to heavy traffic and associated roadway noise and disturbance. Although there is potential for a number of special-status species to occur within BSAs and in the general vicinity of improvement sites, these species would generally be expected to occur in unpaved, naturally vegetated areas outside of the physical limits of disturbance. Some sensitive wildlife species may occur in creeks that are adjacent to or cross under bridges within improvement sites; however, because most or all of the improvement site disturbance limits are within developed areas typically with high levels of traffic, high levels of associated roadway disturbance, and high levels of ambient noise and maintenance activities, direct and indirect construction impacts to special-status wildlife species are expected to be relatively minor. Special-status plants, if present in work areas, may be directly affected by crushing or removal

from personnel or equipment or may be subject to habitat degradation as a result of dust deposition. No vegetation removal is expected in creeks and minimal, if any, is expected in upland areas. Nonetheless, special-status species may be temporarily directly or indirectly affected by nearby construction activities when present within the BSA or general area. Breeding wildlife, particularly nesting birds, would be especially susceptible to nearby disturbance if it is louder than ambient baseline conditions. Impacts to special-status species may be significant prior to the implementation of mitigation measures. Implementation of **Mitigation Measures** (**MM**) **BIO-1** through **BIO-10,** the impact to special-status species would be less than significant.

Operation

Standard operational activities would be unlikely to affect special-status species because the operational components are either underground (i.e., pipes) or enclosed aboveground (i.e., pipes or water tanks). General maintenance of these facilities and components, if required, could result in significant impacts to special-status species if present in the immediate vicinity, which would be a significant impact. Implementation of **MM-BIO-1** through **MM-BIO-10** would ensure a less-than-significant impact to special-status species.

Impact BIO-IV.b.

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?

Less than significant with mitigation.

Construction

Construction of the following improvements would result in relatively minor direct impacts to riparian habitat as a result of trimming of vegetation overhanging the existing paved ROWs, as well as indirect impacts, such as sedimentation, dust, and increased erosion:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
- District 29 Creek Crossing Repairs
- PCH and Topanga Beach Drive Waterline Improvements
- Emergency Source of Water Supply Connection (Las Virgenes Connection)

Sedimentation and erosion of soil stockpiles are expected to be controlled through Best Management Practices (BMPs) (see Section 3.10, *Hydrology and Water Quality*), although minor releases could occur, particularly during storm events, if construction occurs during the wet season. All construction of these improvements is expected to occur within the existing paved ROW, but the removal of concrete from the ROWs may also create dust that could deposit onto nearby vegetation and impact plant health through reduced photosynthetic ability as well as reduce water quality. If dust deposition were extensive enough to cause short-term or long-term habitat degradation and plant die-offs, it could result in significant impacts. With the implementation of **MM-BIO-10**, the impacts of dust deposition would be less than significant.

Where vegetation is overhanging the work area, it may be necessary to trim branches in order to safely and adequately access the improvement footprint. In some cases, it may be possible to avoid trimming vegetation if construction vehicles and/or equipment can freely access and work within the improvement footprint. Construction related to the Fernwood Tank Improvement would result in the

direct removal of up to five coast live oak trees. The maximum expected temporary impact and permanent loss of each of these communities is listed in Table 3.4-2.

Table 3.4-2. Impacts to Riparian Habitat and Other Sensitive Natural Communities (acres)

Site Name	Vegetation Community	Impacts	
		Temporary	Permanent
Carbon Canyon/ Carbon Mesa Road	Southern Riparian Forest	0.001	--
	Southern Sycamore Alder Riparian Woodland	0.135	--
Zuma Creek	Southern Riparian Forest	0.010	--
Fernwood Tank	Southern Coast Live Oak Riparian Forest	--	0.053
Applefield Lane Vacant Lot	Southern Coast Live Oak Riparian Forest	< 0.001	--
PCH West of Topanga Beach Drive	Southern Sycamore Alder Riparian Woodland	0.005	--
Emergency Source of Water Supply Connection (Las Virgenes Connection)	California Walnut Woodland	0.042	--
	Southern Coast Live Oak Riparian Forest	0.161	--
	Southern Sycamore Alder Riparian Woodland	0.004	--
Total		**0.358**	**0.053**

Because vegetation trimming of unprotected species and communities for access would be temporary and insubstantial, compensatory mitigation is not expected to be required. Trimming of Protected Trees including native oaks, California black walnut, California sycamore, white alder, and toyon within the limits of the Malibu LCP would be considered a significant impact. **MM-BIO-11** and **MM-BIO-12** would require investigations by a certified arborists and authorization and replacement mitigation through a Coastal Development Permit at a minimum replacement ratio of 10:1.

Where riparian vegetation under the jurisdiction of the CDFW would be trimmed, significant impacts may occur. Applicable measures would be required during the project's permitting as part of the Lake and Streambed Alteration Agreement.

Trimming of native oaks within the limits of the SMM LCP and/or in unincorporated Los Angeles County could require authorization and replacement mitigation under a Coastal Development Permit – Oak Tree (CDP-OT) and an Oak Tree Permit, respectively. The permanent loss of southern coast live oak riparian forest on the Fernwood Tank Improvement site would result from direct removal of up to five oak trees and would require compensatory mitigation through a CDP-OT, as required by **MM-BIO-12**.

Project-related trimming or removal of protected trees could be significant if it exceeds the limits stipulated by the Malibu and SMM LCPs. However, with successful implementation of **MM-BIO-11** and **MM-BIO-12**, impacts to riparian habitat, Protected Trees, and other sensitive natural communities would be less than significant with mitigation.

Operation

Standard operational activities would have no impact on riparian habitat or other sensitive natural communities because impacts would have occurred during construction and reduced to less than significant as discussed above. Maintenance operations, should they be needed, could result in significant impacts to protected trees, riparian habitat, or other sensitive natural communities,

depending upon whether trees or vegetation has otherwise grown into the work area or into required access areas. Implementation of **MM-BIO-11** and **MM-BIO-12** would ensure that impacts remain less than significant with mitigation incorporated.

Impact BIO-IV.c.

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

Less than significant with mitigation.

Construction

Construction of the nine improvements is not anticipated to take place within any state or federally protected wetlands. Work that would occur at wetland creek crossings for pipeline repair or removal/replacement would be conducted by personnel on the ground using ladders and hand tools or workers hanging from the underside of bridges. Project design plans specify that no vehicles or mechanized equipment would be placed into waterways, and foot personnel would only be used when waterways are dry. The actions that are anticipated to occur at creek crossings, consisting of either District 29 Creek Crossing Repairs, or pipeline removals or replacements for PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) would not be expected to cause any direct temporary or permanent removal, fill, hydrologic interruption, or other actions that would adversely impact the condition or functionality of any state or federally protected wetlands or waters of the U.S. or state. General construction-related activities could have significant direct impacts on jurisdictional features if crews are not aware of the need to protect and avoid incidentally affecting these areas. Indirect impacts from sedimentation or erosion of soil stockpiles could also occur if BMPs are inadequate or not functioning properly during storm events. This would be considered a significant impact. With implementation of **MM-BIO-13** through **MM-BIO-18** and satisfaction of all permit requirements, particularly the CDFW Lake and Streambed Alteration Agreement, a less-than-significant impact would be expected on state or federal wetlands.

Operation

Standard operational activities would have no impact on state or federally protected wetlands because impacts would have occurred during construction and reduced to less than significant as discussed above. Should maintenance be required in or around a jurisdictional feature, such as for pipeline repairs, there could be significant impacts from associated construction depending upon the extent and type(s) of work necessary. With implementation of **MM-BIO-13** through **MM-BIO-18**, a less-than-significant impact would be expected on state or federal wetlands.

Impact BIO-IV.d.

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.

Construction

Migratory Wildlife Corridors

Construction of the following improvements would have no impact on migratory wildlife corridors:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
- Coastline Drive 12-inch Waterline Improvements
- Fernwood Tank Improvement
- PCH and Topanga Beach Drive Waterline Improvements
- Emergency Source of Water Supply Connection (Las Virgenes Connection)
- Big Rock Bypass Improvements.

Construction of District 29 Creek Crossing Repairs and PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) would have less-than-significant impacts on migratory wildlife corridors. These two improvements would require repairs to the existing pipelines at seven creek crossings and replacement or removal of pipelines attached to bridges over three creek crossings. The presence of personnel in the creeks or overhanging from the bridges, as well as the general presence and use of construction equipment in the vicinity, may temporarily deter wildlife including mammals and migratory birds from using the creek crossings in these areas. However, construction disturbance would be limited to a very small, specific area immediately at the bridge locations and would be temporary. There would be no impacts to the creeks and minimal, if any, impacts to associated riparian vegetation inside or outside of the creeks that may be used by migrating wildlife. No permanent direct impacts would be expected to these creeks or to migratory wildlife corridors, and any impacts to wildlife moving through a specific area would be temporary and limited only to work hours. Although some discrete construction activities may result in significant impact, implementation of **MM-BIO-1**, **MM-BIO-5**, **MM-BIO-6**, **MM-BIO-7**, and **MM-BIO-19**, impacts to migratory wildlife corridors would reduce any potential impacts to less than significant.

Native Wildlife Nursery Sites

Construction of the improvements could have significant impacts on native wildlife nursery sites around the improvement sites. Although construction is generally expected to be confined to existing roadways and existing disturbed areas, some light vegetation trimming would likely be required, and on at least one site, Fernwood Tank, up to five oak trees would be removed. Most improvement sites and staging areas are located in close proximity to vegetation that could support nesting birds or other breeding wildlife. Active bird nests or other active wildlife nursery/breeding sites in or around vegetation that needs to be trimmed or removed or generally in the presence of construction could be adversely affected by required construction activities, potentially leading to a significant impact if construction results in take of these nursery sites or nests or of individual wildlife. With implementation of **MM-BIO-1**, **MM-BIO-2**, **MM-BIO-4**, **MM-BIO-5**, **MM-BIO-6**, **MM-BIO-11**, and **MM-**

BIO-12, to replace any oaks that would be removed, impacts to native wildlife nursery sites would be less than significant.

Operation

Normal operational activities would have no impact on migratory wildlife corridors or native wildlife nursery sites except when maintenance is needed because all operational activities are underground or otherwise enclosed. Maintenance activities would have similar effects as those described for construction and would be most likely to result in less-than-significant impacts on wildlife movement. Potentially significant impacts on nesting birds and native wildlife nursery sites could occur, depending upon the extent of the necessary repairs and the availability of suitable habitat in the surrounding area. However, conformance to the same measures stated above for construction would ensure that impacts to migratory wildlife corridors and native wildlife nursery sites remain less than significant. With implementation of **MM-BIO-1**, **MM-BIO-2**, **MM-BIO-4**, **MM-BIO-5**, **MM-BIO-6**, **MM-BIO-11**, and **MM-BIO-12**, to replace any oaks that would be removed, impacts to native wildlife nursery sites would be less than significant.

Impact BIO-IV.e.

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

Less than significant with mitigation.

Construction of each of the improvements except the Fernwood Tank Improvement may have minor impacts on trees that are protected under the Malibu LCP, the SMM LCP, or the Los Angeles County Oak Tree Ordinance. This includes oak trees under the Los Angeles County Oak Tree Ordinance, as well as all native oaks, southern California black walnut, California sycamore, white alder, and toyon that qualify as protected under the Native Tree Protection Ordinance in the Malibu LCP (Chapter 5 of the Local Implementation Plan under the LCP). Some trimming may be necessary in order to safely work in some of the improvement areas, particularly in the areas burned by the Woolsey Fire of 2018 (most areas west of the RMD Winter Canyon Yard), and some trees may require full removal if they are still standing, but are now considered unsafe following the fire. Generally, all three tree protection ordinances exempt permits from being required for trees that have been irreparably damaged by natural disasters and/or that pose a public health and safety risk if left in place; permits are not expected for removal of any trees in the work area that were killed by the Woolsey Fire or other natural disasters. The Fernwood Tank Improvement is expected to result in the direct removal of up to five coast live oak trees during the removal of the two existing tanks and installation of the replacement tank. This improvement is located within the SMM LCP, for which the removal would require a CDP-OT under Section 22.44.950 of the SMM LCP, and also in an unincorporated region of Los Angeles County, for which the removal would require an Oak Tree Permit under Sections 22.56.2050–22.56.2260 of the Los Angeles County Code of Ordinances.

The Malibu LCP's Native Tree Protection Ordinance, the SMM LCP, and the Los Angeles County Oak Tree Ordinance all prohibit the unpermitted cutting, damaging, destroying, removing, or relocating protected trees under each respective ordinance. Therefore, cutting, damaging, destroying, removing, or relocating any protected trees within the improvement sites could result in significant impacts to protected trees under these local tree preservation policies. With implementation of **MM-BIO-4**, **MM-BIO-11**, and **MM-BIO-12**, impacts related to local tree preservation policies would be less than significant.

Operation

Operational activities would have no impact on tree preservation policies or ordinances because all work would have already occurred, and the operational parts are enclosed. Under most maintenance scenarios, no impacts would be expected. However, when tree trimming or removal is necessary for maintenance work where tree growth has blocked or reduced access to the work area, significant impacts could occur if protected trees need to be trimmed or removed in order to perform the required work. With implementation of **MM-BIO-4**, **MM-BIO-11**, and **MM-BIO-12**, impacts related to local tree preservation policies would be less than significant..

Impact BIO-IV.f.

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 with mitigation.

Construction

Construction of the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements and the Emergency Source of Water Supply Connection (Las Virgenes Connection) would result in the temporary impact of up to 0.068 acre and 0.105 acre of ESHA under the Malibu LCP, respectively. However, these calculations are based upon the maps provided in the Malibu LCP, and, when overlaid against the improvement site boundaries, it is likely that the ESHA boundaries would actually be avoided as a result of mapping resolution error and that there would be no direct impacts to designated ESHA. Under Section 4.8 of the Malibu LCP, mitigation is required for the removal, conversion, or modification of natural habitat for new development, including for required fuel modification and brush clearance. However, assuming that the above impacts are the result of mapping artifacts, the proposed improvements are not expected to result in the removal, conversion, or modification of ESHA areas. There may be minor effects to adjacent vegetation as a result of invasive weed spread or dust generated by construction at these sites or at other sites adjacent to designated ESHA. There is no stated guidance in Chapter 4 of the Malibu LCP regarding temporary habitat degradation as a result of construction-related weeds or dust. Spread of invasive plant seeds or spread of excessive dust could lead to the indirect modification of ESHA areas if it results in the gradual loss of individual plants over time due to increased competition with weeds or adverse impacts to photosynthetic capabilities. These may be considered to significant impacts if ESHA areas are modified or converted as a result. With implementation of invasive weed prevention under **MM-BIO-9** and dust control measures under **MM-BIO-10**, impacts to ESHA as designated under the Malibu LCP would be reduced to a level that is less than significant.

Operation

Operational activities would have no impact on conservation plans because routine operation of the facilities (pipelines and water tanks) would have no impact. Maintenance of facilities adjacent to ESHA could result in significant impacts for the same reasons as during construction if the maintenance requires heavy equipment. With implementation of invasive weed prevention under **MM-BIO-9** and **MM-BIO-10**, impacts to ESHA as designated under the Malibu LCP would be reduced to a level that is less than significant.

3.4.3.3 Mitigation Measures

The following mitigation measures would be required in order to keep project impacts at a level of less than significant to biological resources.

Mitigation Measure BIO-1: Environmentally Sensitive Area Fencing

Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around areas adjacent to the improvement limit of disturbance to designate ESAs to be protected. No construction activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of cut or fill material in areas where vegetation is immediately adjacent to planned grading activities.

Mitigation Measure BIO-2: Pesticides

Herbicides and insecticides that are not approved as safe to use around water will not be used, nor will rodenticides.

Mitigation Measure BIO-3: Clean Construction Area

To avoid attracting predators of special-status species, the improvement sites will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site(s).

Mitigation Measure BIO-4: Preconstruction Nesting Bird Survey

If construction commences during the bird breeding season (March 1 through June 30), a preconstruction survey for nesting birds by an experienced avian biologist will occur within 3 days prior to construction activities. The survey will occur within all suitable nesting habitat within the improvement impact area and at a buffer deemed suitable by the biologist. It is assumed that areas along PCH will receive a smaller survey buffer than areas where there is less ambient disturbance. If nesting birds are found, an avoidance area will be established as appropriate by a qualified biologist around the nest until it has determined that young have fledged or nesting activities have ceased. The improvement site will need to be resurveyed if there is a lapse in construction activities for more than 7 days during the nesting season.

In areas where vegetation trimming is required during the construction phase, the avian biologist will conduct a preconstruction survey for nesting birds in the targeted vegetation within 3 days prior to trimming, and preferably on the same day. This action is required even if there has been no lapse in construction activities in an area so as to avoid direct take of active but “acclimated” nests that may be present.

Mitigation Measure BIO-5: Noise Control

So as to reduce unnecessary sound or disturbance to wildlife, vehicles or equipment that are not actively being used will not be left to idle unnecessarily.

Mitigation Measure BIO-6: Nighttime Construction

To the extent feasible, nighttime construction will not occur. When nighttime construction cannot be avoided, any required external light sources must be directed at the ground or directly at active construction and must have baffles or other mechanisms to reduce the amount of visible light that may disturb nearby nesting, foraging, or migrating wildlife.

Mitigation Measure BIO-7: Pets

No pets will be allowed in, or adjacent to, the improvement site.

Mitigation Measure BIO-8: Plant Surveys

To ensure that rare plant species are not present at the time of construction of any improvement, focused surveys for rare plant species will occur within suitable habitat during the most recent blooming season prior to the start of construction. Surveys for Lyon's pentachaeta, Santa Monica dudleya, Braunton's milk vetch, Agoura Hills dudleya, San Fernando Valley spineflower, Coulter's saltbush, Malibu baccharis, Brewer's calandrinia, Catalina mariposa-lily, Plummer's mariposa-lily, Lewis' evening primrose, western dichondra, mesa horkelia, decumbent goldenbush, southern California black walnut, fragrant pitcher sage, ocellated Humboldt lily, white-veined monardella, chaparral ragwort, and California screw moss will be conducted within areas of coastal scrub, chaparral, and woodland and non-native grassland habitat within the project's limits of disturbance. Surveys for Ventura marsh milk-vetch, salt marsh bird's-beak, coastal dunes milk-vetch, red sand verbena, Lewis' evening primrose, southwestern spiny rush, south coast branching phacelia, and woolly seablite will be conducted within areas of coastal dunes and coastal lagoons within limits of disturbance. Special-status plants found during focused surveys will be avoided to the extent feasible. Where avoidance is not possible, and as feasible depending upon the species and population, non-listed special-status plants will be relocated to the nearest suitable habitat by a qualified biologist prior to construction. State or federally listed species must be avoided unless a take permit is obtained from the appropriate discretionary regulatory agency. Habitat loss for plants with a CRPR of 1 or 2, or those that otherwise are locally rare and for which loss of individual plants or populations would be considered locally or regionally significant, will be mitigated at a minimum 1:1 ratio through mitigation bank or in-lieu fee program credit purchase or other approved method.

Mitigation Measure BIO-9: Invasive Weed Avoidance

Prior to site mobilization, all construction equipment and any vehicles that will be driven or parked off of pavement in areas containing invasive weeds will be thoroughly washed, to the extent possible, to remove invasive weed seeds from the tire tracks, undercarriages, and elsewhere that seeds may accumulate. In addition, any invasive plants that are removed from any of the project sites must be properly contained and disposed of so as to avoid their additional spread.

Mitigation Measure BIO-10: Dust Control

A water truck will be kept onsite and will be used as needed for dust containment. To the extent possible, the spread of fugitive dust will be avoided.

Mitigation Measure BIO-11: Certified Arborist

Prior to construction, a certified arborist will investigate and determine whether any trees that may be trimmed, removed, or otherwise affected on any site qualify as protected under the Malibu LCP, the SMM LCP, or the Los Angeles County Code of Ordinances.

Mitigation Measure BIO-12: Coastal Development Permit

The LACDPW requires compliance with the permit conditions stated within the Coastal Development Permit. The Los Angeles County Department of Public Works must seek a Coastal Development Permit under the Malibu LCP for the removal of or adverse impacts to any native oaks, southern California black walnut, California sycamore, white alder, or toyon, as protected under the Native Tree Protection Ordinance, that have at least one trunk measuring at least 6 inches in diameter, or a combination of any two trunks measuring a total of at least 8 inches in diameter, measured at 4.5 feet above natural grade. Under this ordinance, removed trees or trees left in a worse state than prior to construction must be replaced at a ratio of at least 10:1, either onsite or offsite, and the applicant must submit a native tree replacement planting program outlining planting locations and tree sizes, as well as details for monitoring success, including annual monitoring and reporting for at least 10 years. All planted trees must be less than 1 year old, and oaks must be grown from local acorns collected from the site vicinity. If the 10:1 replacement ratio cannot be met, an in-lieu fee commensurate to the type, size, and age of the affected tree(s) will be required instead. Additional requisite measures and postconstruction requirements would be included as permit conditions of approval and would include 1) protective fencing around root zones (no construction, grading, staging, or storage allowed); 2) any approved development inside the fenced areas can only use hand-held tools and must not damage root systems; 3) a qualified biologist or arborist must monitor protected trees in or adjacent to construction; and 4) if the protective fence is compromised, work must be suspended until the fence is repaired or replaced. The only exemptions to the permit requirement include native trees that have been destroyed or damaged beyond recovery by a natural disaster, native trees that are at risk of falling and cannot be stabilized and that pose an imminent public health and safety risk, and native trees that were planted for ornamental reasons and not as part of a LCP or Coastal Act requirement.

The LACDPW will seek an Oak Tree Permit under the Los Angeles County Code of Ordinances before cutting, destroying, removing, relocating, damaging, or encroaching within the protected zone (defined as the dripline plus 5 feet, or 15 feet from the trunk, whichever is greater) of all oak trees in unincorporated Los Angeles County that are at least 8 inches in diameter or that have a combination of any two trunks measuring a total of at least 12 inches in diameter at 4.5 feet above natural grade, as well as any tree that has been planted as a replacement tree pursuant to this ordinance. The permit application must contain a detailed oak tree report evaluating structure, health, impacts, and mitigation for every potentially affected oak tree onsite. Under this ordinance, removed trees must be replaced at a ratio of at least 2:1, and all trees must be at least a 15-gallon specimen and measure at least 1 inch in diameter measured 1 foot above the base. Replacement trees must be maintained, monitored, and replaced for a minimum of 2 years after planting, and a plan must be put in place to protect the tree(s) once planted. Exemptions to the permit include construction of subdivisions approved prior to the effective date of the ordinance; oaks that are considered a public health or safety hazard; oaks that have been irretrievably damaged or destroyed by a natural disaster; maintenance necessary to protect or maintain electricity, communications, or other public utilities; tree maintenance limited to medium pruning

of branches 2 inches in diameter or smaller; trees planted, grown, and/or held for sale by a licensed nursery; and trees in an existing road ROW for which pruning, removal, or relocation is necessary for safety reasons or road damage.

The LACDPW will seek a CDP-OT before cutting, destroying, removing, relocating, damaging, or encroaching within the protected zone (defined as the dripline plus 5 feet, or 15 feet from the trunk, whichever is greater) all oak trees within the SMM LCP that are at least 6 inches in diameter or that have a combination of any two trunks measuring a total of at least 8 inches in diameter at 4.5 feet above natural grade, or that are replacement trees planted under this ordinance. General application requirements are virtually identical to the Los Angeles County Oak Tree Ordinance. However, under the CDP-OT, mitigation for every affected oak tree must be as follows: the removal of oak trees must be replaced at a ratio of 10:1, an encroachment of more than 30 percent into the protected zone of an oak must be mitigated at a 10:1 ratio, encroachment that extends within 3 feet of the trunk must be mitigated at a 10:1 ratio, trimming branches over 11 inches in diameter must be mitigated at a 5:1 ratio, a 10–30-percent encroachment into the protected zone must be mitigated at a 5:1 ratio, and less than 10-percent encroachment into the protected zone requires only monitoring. Each replacement tree must be the same species as that it is intended to replace, it must be at least a 1-gallon size specimen, it must measure at least 1 inch in diameter 1 foot above the base, and it must have an acorn taken from the SMM planted within its watering zone. Replacement trees must be maintained, monitored, and replaced for a minimum of 7 years after planting. Where feasible, replacement trees must be grown from acorns collected in Los Angeles or Ventura Counties and must be planted in the same general area of the subject property as the tree they are replacing. If not feasible to plant onsite, trees must be planted in a protected area within the SMM and, where feasible, must be in the same watershed as the affected trees; if it is not possible to plant in the same watershed, an additional two trees will be added to the mitigation ratio for each affected tree. Trees with less than a 30-percent encroachment into the protected zone must be monitored and reported on annually for a minimum of 10 years, during which time if the subject trees die or deteriorate in health as a result of the project, they must be replaced at a 10:1 ratio under the same conditions as those described above. Finally, a plan must be submitted and implemented for the protection of all oak trees on the subject property, both during and after development. Exemptions to the permit include where there is an existing and unexpired CDP and oak tree permit approved prior to the effective date of the LCP; oaks that are considered a public health or safety hazard within 200 feet of an existing structure or on open land threatening public property or utilities; oaks that have been irretrievably damaged or destroyed by a natural disaster; maintenance necessary to protect or maintain electricity, communications, or other public utilities; tree maintenance limited to medium pruning of branches 2 inches in diameter or smaller; trees planted, grown, and/or held for sale by a licensed nursery; and trees in an existing road ROW for which pruning, removal, or relocation is necessary for safety reasons or for road damage.

Mitigation Measure BIO-13: Spoils and Rubble

Spoils and rubble will not be deposited outside the identified limits of construction and material waste generated by the project will be disposed of offsite.

Mitigation Measure BIO-14: Equipment Maintenance

All equipment will be adequately maintained to prevent the leaking of oil, fuel, or other hydraulic fluids into nearby creek crossings or into other areas where it could accidentally contaminate

waterways. Heavy equipment will be examined for leaks each day before work begins and, in the case of a leak, their use will not be allowed until any leak-related issues are fixed. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur in designated staging areas.

Mitigation Measure BIO-15: Stormwater Pollution Prevention Plan

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to affect water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include relevant BMPs to control pollutants, such as sediment control, catch basin inlet protection, construction materials management, and non-stormwater BMPs.

Mitigation Measure BIO-16: Slope Protection

The areas of disturbance and constructed slopes will be protected with temporary and/or permanent erosion controls, including fiber rolls, silt fencing, soil binders, rock slope protection, and/or revegetation with an erosion control seed mix.

Mitigation Measure BIO-17: Preconstruction Training

When in or near natural habitat areas, all personnel involved in the onsite project construction will be required to participate in a preconstruction training program to understand the mitigation obligations on the project.

Mitigation Measure BIO-18: Jurisdictional Waters and Riparian Vegetation

No equipment or vehicles must be operated or placed within the limits of jurisdictional waters or associated riparian vegetation. In areas where a foot crew is required to be present within jurisdictional waters for pipeline repairs, removals, or replacements, all tools, materials, and associated mechanical equipment must be packed out and removed on a daily basis when the crew leaves the site. No construction-related materials must be left within jurisdictional limits or associated riparian vegetation overnight.

Mitigation Measure BIO-19: Wildlife Movement

Equipment maintenance, lighting, and staging will occur only in designated areas, and will not block or impede movement through wildlife corridors.

3.4.3.4 Level of Significance after Mitigation

With implementation of **MM-BIO-1** through **MM-Bio-19**, impacts to biological resources would be reduced to less-than-significant levels.

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3.5 Cultural Resources

This section describes the known existing cultural resources, the regulatory setting, the potential impacts that would result from implementation of the proposed project, and mitigation measures, if necessary. It should be noted that, in conformance with recent revisions to the CEQA Guidelines (2016 and 2018), tribal cultural resources are addressed in a separate section, Section 3.18, *Tribal Cultural Resources*, and paleontological resources are addressed in Section 3.7, *Geology and Soils*.

Much of the information in this section is based upon the *Cultural Resources Technical Report for the Program Environmental Impact Report for the District 29 Waster Systems Master Plan, City of Malibu, Los Angeles County, California*, prepared by Garcia and Associates (2015) for an earlier planning process by District 29. This report addressed the study area for this project, and additional areas in the Malibu and Los Angeles County area.

3.5.1 Environmental Setting

3.5.1.1 Native American Prehistory

Los Angeles County's history and prehistory, including the Malibu area, have been scientifically studied for over 70 years. The Malibu region was an important focus of human habitation during the prehistoric period and subsequent early-historic period.

The study area falls into an area referred to by many archaeologists as the Northern Bight, home to evidence of some of the earliest human occupation in California and North America. Table 3.5-1 presents the archaeological timeline from approximately 13,000 before present (BP) to the arrival of Europeans.

Table 3.5-1. Archaeological Timeline in the Malibu Area

Name of Period	Approximate Dates	Description
Pleistocene to Holocene Transition	13,000 to 10,000 BP	Because of research at several early southern California sites (Santa Rosa Island, San Miguel Island, Santa Inez River, Malaga Cove near Palos Verdes, et al.) scholars recognize that widespread occupation of California mainland began circa 11,000 to 10,500 BC. Little known about archaeological sites in Malibu area. It is likely that sites that once-coastal sites have been destroyed by erosion, submerged by rising sea levels, or deeply buried beneath sediments.

Name of Period	Approximate Dates	Description
Millingstone Period	10,000 to 6,600 BP	Represented in Malibu area by high occurrence of grinding tools, including hand stones and milling slabs, core and cobble tools, and dense concentrations of shellfish found at sites. Prevalence of grinding tools indicates subsistence shift to small seeds found in chaparral plant community. Settlement less transitory and population increases evident archaeologically. At least 40 sites known along the Bight coast. Near Santa Monica Mountains, abundant tools of quartzite, basalt, and other volcanic stone materials found, suggesting increased exploitation of resources in the Santa Monica Mountains and Malibu coast. Coastal sites, like those known in study area, often contain high density of mussel shells, such as CA-LAN-114,[1] a significant site in study area. Most other prehistoric known Native American sites in the study area first identified as small scatters of shell remains eroding from surface. Some contain both flaked and ground stone tools and burials near larger village sites.
Early Period	6500 to 2700 BP	Large assemblages of hand stones and milling slabs continued to be used. Artifact assemblages indicate major shift in subsistence technology, evidenced by substantial quantities of mortars and pestles, and increased numbers of large side-notched projectile points, suggesting subsistence shift that included greater reliance on acorns and intensification in hunting both terrestrial and marine mammals.
Middle Period	2700 to 900 BP	Population increases are again evident, based on the number and size of archaeological sites in region. Marked by renewed focus on marine resources fueled by development of circular shell fishhooks, use of barbed harpoons, and plank canoe (*tomol*) within the Santa Barbara Channel area. Establishment of sophisticated social and political organization and beginnings of a hierarchy of social status.
Late Period	After 900 BP	Maritime adaptations continued to intensify, evidenced by large permanent and semi-permanent thriving villages along Los Angeles County coast. Populations in villages created new challenges that resulted in increasingly complex social and political organization. Large-scale trade network developed between mainland, Channel Islands, and interior. Olivella beads, made from marine snail shells, were used as currency throughout region. Likely that this aboriginal society was akin Chumash culture that first Europeans encountered.

Source: Garcia and Associates 2015

[1] Archaeology sites are identified by a "trinomial" from the Smithsonian system of archaeological sit numbering. The first parts of the trinomial identify the location of the site by the two-letter code for the state, then a three-letter code for the county. This is followed by number for the site. So this site is CA (California)-LAN (Los Angeles County)-114 (the specific site designation).

3.5.1.2 European First Contact

The first contact between Europeans and the coastal Chumash and Tongva (Gabrielino) began with Juan Rodriguez Cabrillo's voyage in 1542. However, it was not until the 1769 land expedition of Gaspar de Portolá that there was interaction between Spanish explorers and the socially and economically stratified society of the Chumash and other Native American societies. This encounter marked the beginning of a major transformation in the lives of the Native American population.

In 1771, Mission San Gabriel was founded to the east of the Malibu Coast, and Native Americans villages throughout the Los Angeles Basin were encouraged to move away from their old habitation areas and congregate at the new mission. Ten years after the founding of San Gabriel Mission, the town of Los Angeles was founded. More than 10 years after the founding of San Gabriel Mission, a second mission, San Buenaventura, was built to the west.

During this period, the Spanish crown granted Jose Bartolome Tapia, part of the de Anza expedition, Rancho Topanga Malibu Sequit for cattle ranching. He was also granted an additional 50,000 acres on the northern slope of the Santa Monica Mountains, including the Conejo, Russell, and Triunfo valleys. Native Americans from both sides of the Santa Monica Mountains were then in direct competition with cattle ranchers for the use of their traditional land. The Native American population relocated to the coastal missions: most of the Chumash of the Malibu coast and Santa Monica Mountains interior went to San Buenaventura, while the Tongva were relocated to Mission San Gabriel and later to Mission San Fernando Rey de España.

By the early 1830s, few independent Native American settlements remained on the Los Angeles plain and coast strip, with most of the populations having moved into the mission and new ranchos. Most of the area was depopulated of Native Americans, with less than 1 percent of its original population remaining (Garcia and Associates 2015).

3.5.1.3 Historical Background

Table 3.5-2 presents the historical timeline from approximately 1821 to the early twentieth century.

Table 3.5-2. Historical Timeline in the Malibu Area

Name of Period	Approximate Dates	Description
Rancho Period	1821 to 1845	1821: Mexican independence from Spain. Secularization of missions Pueblo lands were divided up into smaller lots near missions, larger farm lots further east, lands reserved for municipal use and common lands, and large cattle pastures.

Name of Period	Approximate Dates	Description
Anglo-Mexican Period	1846 to 1860	1846: Bear Flag Revolt – attempted revolt by small group of U.S. settlers against Mexican government; Lieutenant Charles Fremont marched through the Santa Ynez to capture Santa Barbara. 1848: California declared a U.S. territory 1850: California admitted as 31st state; ranchos evaluated by California State Lands Commission to determine their validity. Next 20 years: influx of settlers from east, marrying into wealthy California families (Spanish-speaking population predating statehood). After 1855: reduction in demand for California cattle because of increased competition from Texas, New Mexico, and the Midwest; large landholders' political and economic strength, eventually led to the subdivision of most rancho lands throughout California. 1850s: American farming families drawn to area by local advertising and suitability agricultural land, building region reputation as rich agricultural district.
Americanization Period	1860 to 1900	1860s: drought caused financial difficulties at many ranchos in region; most divided up and sold; many bought by eastern financiers after petroleum deposits in area. 1929: Rindge family lost their battle to stop highway from cutting through their ranch along Malibu coast; Roosevelt Highway (later PCH) built; Ridge family began to sell off ranch and road access opened up coast to further development.

Source: Garcia and Associates 2015

3.5.1.4 Malibu Area Archaeology

In the last century, hundreds of archaeological studies have been conducted within 0.25 mile of the project area of potential effect (APE) with many more throughout the Santa Monica Mountains and along the Malibu Coast[2] (Garcia and Associates 2015). There is a diversity of site types in the region and the preservation of sites well into the early twentieth century. Large coastal shell middens[3], open sites in the interior, cave and rock shelter sites, and rock art sites all offered early archaeological studies of a relatively undisturbed and diverse set of data from which to interpret the Native American past. An important contribution to the scientific investigations was the 1945 discovery of an open site in a Topanga drainage within what is now Topanga State Park. This was the first site in Los Angeles County to receive a trinomial, CA-LAN-1. With this discovery it became obvious that an archaeological presence in the interior was much earlier than previously known, with some components in the area possibly dating back more than 5,000 years (California State Parks 2019).

[2] The APE represents the area where project activities would occur during construction or operation. The APE was identified for the 2015 Cultural Resources Technical Report for a larger area.

[3] A *midden* is a mount or deposit containing shells, animal bones, and other refuse that indicates a human settlement.

Another important archaeological project was conducted from 1947 to 1948 on the Malibu Coast on the western side of Point Dume at Zuma Creek. The Zuma Creek site indicated no great reliance on terrestrial hunting, but instead featured great numbers of *manos* and *metates*[4] suggestive of plant food collecting and processing.

One of the first archaeological sites identified in Los Angeles County was a pictographic panel with historic pictographs showing mounted horsemen, inland from Point Dume, at the Santa Monica Mountains crest. The site (CA-LAN-717) was locally famous as early as the turn of the century. Several other rock art sites in the vicinity have been recorded although few of these have been studied in depth.

3.5.1.5 Archaeological Sites

The cultural resources record established a large APE for initial analysis of potential improvements being considered by District 29. Of the 14 resources identified in the APE, nine sites are located within or within approximately within 100 feet the portion of the APE applicable to the proposed project (Table 3.5-3). A discussion of each site follows the table; precise locations and maps are not presented in this EIR to project the integrity and security of archaeological resources (Garcia and Associates 2015).

Table 3.5-3. Known Cultural Resources within 100 feet of District 29 Project APE

Primary No.	Trinomial	Description
P-19-000030	CA-LAN-30	Early village site, disturbed by highway development, midden/ artifacts present
P-19-120007	Not available	Prehistoric site, lithic (i.e., stone) scatter, tools
P19-000189	CA-LAN-189	Prehistoric site, lithic scatter, surface and subsurface components
P-19-000201	CA-LAN-201	Prehistoric, groundstone artifact(s)
P-19-000480	CA-LAN-480	Prehistoric, artifact scatter, fire burned rock, midden
P-19-001714	CA-LAN-1714	Cemetery and village site, midden/artifacts present, developed and disturbed
P-19-002818	CA-LAN-2818	Prehistoric site, midden, lithic scatter, burial
P-19-002819	CA-LAN-2819	Prehistoric site, midden, lithic scatter
P-19-002820	CA-LAN-2820	Prehistoric site, lithics

Source: Garcia and Associates 2015

CA-LAN-30. CA-LAN-30 was first recorded in 1967 as a 100-foot by 100-foot site recognized by a sparse shell scatter with several flaked and ground stone tools including manos, metates, and scrapers. An update of the site record in 1994 suggested this site represents an Early Period village with a large intact midden. The 1994 Phase I[5] study expanded the size of the site to approximately 590 by 460 feet. The site is located within 100 feet of the APE.

[4] A *mano* is a ground stone hand tool. A *metate* is a large flat or slightly concaved stone that sits on the ground. Together they are used to grind food.

[5] A Phase I archeological survey is the most basic level of survey, assessing archaeological sensitivity, meaning the potential for resources to be present in area. It includes historical research, environmental context review, and field

CA-LAN-189. CA-LAN-189 is a large prehistoric site that straddles Escondido Canyon north of PCH. This probable Early Period site was first recorded in 1950 as an artifact scatter on a headland overlooking the ocean. Several Phase I excavations and surveys (in 1980 and 1989) have identified buried midden and expanded the site boundaries to approximately 900 by 800 feet. Since 1989, several episodes of ground disturbing activity have taken place at the site to create level surfaces, including grading and the deposition of fill leaving intact midden under the fill in some areas. This site is within 100 feet of the APE (however, at this location, no ground disturbance is proposed).

P-19-120007. This site is likely an extension of CA-LAN-189 and was similarly recorded as a lithic scatter in an area heavily disturbed by agricultural activity. It is within 100 feet of the APE (however, at this location, no ground disturbance is proposed).

CA-LAN-201. CA-LAN-201 was first recorded in 1951 as a small village site on the west side of an area creek. Ground stone tools and human remains were recovered during road construction at the site. A survey of the mouth of the creek in 1995 helped define the current boundary of the site. As currently mapped, the site boundary intersects the APE by approximately 50 feet.

CA-LAN-480. This site barely intersects the APE of the District 29 project. This site was first recorded in 1972 as a lithic scatter and midden containing fire-affected rock and shell. During the pedestrian survey for the cultural report (Garcia and Associates 2015), no cultural resources were observed. A small portion of the APE may be within the margin of error for the estimated boundaries of the site.

CA-LAN-1714. CA-LAN-1714 was first recorded as a small prehistoric campsite during a survey in 1990. Archaeological test units excavated to a depth of approximately 15 inches below the ground surface revealed possible hearth features as shallow as 4 to 8 inches. Artifacts recovered included manos, metates, and other ground and flaked-stone tools. The site is estimated to be approximately 80 by 50 feet in area with the northern portion of the site heavily disturbed from the creation of a firebreak. The site is approximately 150 feet from the APE.

CA-LAN-2818. CA-LAN-2818 was first recorded in 2000 as a shell midden; it was thought that the site was likely damaged by grading of the ridge for previous construction. However, during construction monitoring at the site in 2005, several intact cultural features were recorded, as well as several types of prehistoric artifacts. During limited Phase III data recovery excavations, several features were excavated, including a single human burial found between approximately 13 and 24 feet deep, just above the bedrock. The original site size was estimated at approximately 60 by 25 feet, based on limited excavations and surface survey. The estimated site size is somewhat larger and intersects the APE.

CA-LAN-2819. CA-LAN-2819 is a prehistoric shell midden adjacent to an area creek first recorded during the monitoring of geologic test bores and test pits. It is thought that a large habitation site with clearly distinguishable activity areas is present, based on the differences in artifacts found in each of the test pits. The site covers a roughly a 230-foot by 100-foot area and intersects the APE.

CA-LAN-2820. CA-LAN-2820 is a small artifact scatter located during a survey of a parcel extending south from PCH to the seashore. The record search data indicate that the site boundary encompasses the entire parcel. The parcel boundary is less than 100 feet from the APE. Although the APE is located on the opposite side of PCH, the lack of a well-defined site boundary, coupled with the presence of

inspection (sometimes referred to as a pedestrian survey). Phase II testing combines shovel test pits or small excavations. In Phase III, full excavations of the site is undertaken to collect or preserve the site.

other well-defined cultural resources in the general vicinity, indicates that this coastal area is generally culturally sensitive.

3.5.1.6 Historic Sites

There are seven officially recognized local, state, and federal historic sites in or near Malibu. None of the following sites are within the APE for the District 29 project. (There are no historic districts in APE.)

- **Adamson House**. This site is located at Malibu Lagoon State Park. It was once the home of Rhoda Rindge Adamson, daughter of Frederick and May K. Rindge. The Adamson House is the best surviving work and only intact example of architecture from Stiles O. Clements and represents the Moorish-Spanish Colonial Revival Style popular in the late 1920s. The site is listed in the National Register of Historic Places (NRHP) and as a California Historical Landmark. The Adamson House is approximately 1 mile west of Segment 3 of the PCH and Topanga Beach Drive improvement and approximately 1 mile southeast of the RMD Winter Canyon Yard staging area.
- **Serra House.** This site is located on Landumus Hill, near the mouth of Malibu Creek. It is a site of local historic interest as it was once known as the unfinished Rindge Mansion. The site was purchased in 1942 by the Franciscan order. The Serra House is approximately 1 mile northwest of Segment 3 of the PCH and Topanga Beach Drive improvement and approximately 1 mile northeast of the RMD Winter Canyon Yard staging area.
- **Malibu Pier.** This site is located east of Malibu Lagoon State Park, in the commercial core of the city. The site is a registered Los Angeles County Landmark and a California Point of Historical Interest. The Malibu Pier is approximately 0.6 mile west of Segment 3 of the PCH and Topanga Beach Drive improvement.
- **Historic Village of Humaliwo.** This NRPH-listed site, located in the Malibu Lagoon State Park, was an important center of Chumash life in this region in prehistoric and early historic times. (Sampson 2019). The historic village is approximately 1 mile west of Segment 3 of the PCH and Topanga Beach Drive improvement and approximately 1 mile southeast of the RMD Winter Canyon Yard staging area.
- **Point Dume.** A State Historic Landmark at Point Dume State Beach, this landmark is approximately 1 mile southeast Zuma Creek Crossing Repair.
- **Saddle Rock Ranch Chumash Pictograph Site:** A National Historic Landmark in the Malibu Hills, this site is approximately 3 miles northeast of the Emergency Source of Water Supply Connection (Las Virgenes Connection) improvement.
- **Stevens House, Malibu Colony.** This NRHP-listed site is a John Lautner-designed house. The Stevens House is approximately 0.9 mile southeast of the RMD Winter Canyon Yard staging area.

3.5.2 Regulatory Framework

The following regulations and policies may be applicable to the District 29 project. Although regulations applicable to tribal resources are included here, they are also applicable to Section 3.8, *Tribal Cultural Resources*. Although regulations herein may include references to paleontological resources, these resources are included in Section 3.7, *Geology and Soils*.

3.5.2.1 Federal

National Historic Preservation Act of 1996

The National Historic Preservation Act (NHPA) (16 USC 470) established the National Register of Historic Places (NRHP), which recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the four established criteria. In addition to meeting the criteria of significance, a property must have integrity, or "the ability of a property to convey its significance." There are NRHP-listed sites in the Malibu area.

Section 106

Section 106 of the NHPA (36 CFR 800) sets forth procedures to be followed for determining eligibility of properties for the NRHP. The eligibility criteria and processes are used by federal, state, and local agencies in the evaluation of the significance of cultural resources. Revisions to Section 106 in 1999 emphasized the importance of Native American consultation.

Section 110 (Executive Order 11593)

In 1971, President Richard Nixon signed Executive Order (EO) 11593, Protection and Enhancement of the Cultural Environment. It was later codified as Section 110 of the NHPA (36 CFR 8921) and required the protection and enhancement of the cultural environment by providing leadership, establishing State Offices of Historic Preservation (SHPOs), and developing criteria for assessing resource values.

Native Indian Religious Freedom Act

This Act (42 USC 1996) protects Native American religious practices, ethnic heritage sites, and land uses. There are archaeological resources in the APE associated with Native American sites.

Native American Grave Protection and Repatriation Act of 1990

This Act (25 USC 3001 et seq.) defines cultural items, sacred objects, and objects of cultural patrimony, establishes an ownership hierarchy, provides for review by the Reviewing Committee, allows excavation of human remains (but stipulates return of the remains according to ownership), sets penalties; calls for inventories, and provides for return of specified cultural items. Known resources located in the APE, including a cemetery site, are associated with Native Americans. In addition, unknown resources and/or human remains may be found in the improvement areas.

American Antiquities Act of 1906

This Act (16 USC 431-433) declares that any person who excavates or destroys any historic or prehistoric site, ruin, or monument on lands owned or controlled by the government without permission is subject to fines and imprisonment. Excavation would be required for some of the District 29 improvements.

3.5.2.2 State

In the following discussions of state regulations, the term *state agency* means not only a statewide agency, such as the California Department of Fish and Wildlife, but also any public agency in the state, including local and regional agencies.

California Office of Historic Preservation

The California Office of Historic Preservation (OHP) implements the NRHP in California and administers the California Register of Historical Resources (CRHP). Certain resources are determined by the statute to be automatically included in the CRHP, including California properties formally determined eligible for, or listed in, the NRHP. The criteria for eligibility for the CRHP are based upon, and nearly identical to, NRHP criteria. It is possible that a historical resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHP. The APE includes state-designated historical resources.

OHP maintains the California Historic Resources Inventory and conducts statewide comprehensive resource surveys and preservation programs. The State implements the NHPA through OHP. The SHPO engages in the Section 106 consultation process on behalf of the State.

Public Resources Code, Section 5020.1

Section 5020.1 defines several terms, including *historical resource* and *substantial adverse change*. *Historical resources* include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. *Substantial adverse change* means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. The APE includes historical resources as defined by Section 5020.1.

Public Resources Code, Section 5024 and 5024.5

These regulations require state agencies to take a number of actions to ensure preservation of state-owned historical resources under their jurisdictions. Section 5024 established the CRHR, sets forth criteria to determine significance, defines eligible properties, and lists nomination procedures.

Section 5024.5 provides that no state agency may alter, relocate, or demolish a historical resource without meeting notice and consultation requirements with the SHPO. The SHPO may help the state agency develop mitigation measures. The APE includes historical resources subject to Section 5024 and Section 5024.5.

Public Resources Code, Section 5097.94

Section 5097.94 establishes the Native American Heritage Commission (NAHC) and provides that the NAHC has powers and duties, including the following:

- Identifying and cataloging places of special religious or social significance to Native Americans and known graves and cemeteries of Native Americans on private lands.
- Making recommendations relative to Native American sacred places located on private lands, inaccessible to Native Americans, and having cultural significance to Native Americans for

acquisition by the state or other public agencies for the purpose of facilitating or assuring access thereto by Native Americans.

- Bringing an action to prevent severe and irreparable damage to, or assure appropriate access for Native Americans to, a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property.

Additionally, the NAHC must notify the Most Likely Descendant (MLD) of the deceased Native American. The MLD(s), with landowner permission, may inspect the discovery of the Native American remains and recommend an approach for the "treating or disposing, with appropriate dignity, the human remains and any associated grave goods." Section 5097.98 provides deadlines for this process. If there is no MLD or no agreement with the MLD's recommendation, the remains may be reinterred "with appropriate dignity on the property in a location not subject to further subsurface disturbance." The District 29 project has the potential to affect resources requiring the involvement of the NAHC.

Public Resources Code, Section 5097.98

Section 5097.98 defines procedures for notification of discovery of Native American artifacts or remains and for the disposition of such materials. This section also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions. The District 29 project has the potential to affect resources, known and unknown, that would require notifications in accordance with Section 5097.98.

California Health and Safety Code, Section 7050.5

Section 7050.5 states that if human remains are discovered during construction, the project owner is required to contact the county coroner. The District 29 project would be required to comply with Section 7050.5.

Public Records Act

The Public Records Act (California Government Code 6254(r), 6254.10) contains provisions regarding the confidentiality of information concerning the location of archaeological resources. District 29 will comply with the Public Records Act by protecting the Cultural Resources Technical Report and by not disclosing the locations of archaeological resources.

Assembly Bill 52

This Bill amended the Section 21084.3 of the CEQA statute to specify that if a project has the potential to cause a substantial adverse change to a tribal cultural resources, it would result in a significant impact, and describes mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impact. This applies to project with a Notice of Preparation (NOP) or a Negative Declaration (MD) or Mitigated Negative Declaration (MND) on or after July 1, 2015. See Section 3.18, *Tribal Cultural Resources*, for more information.

3.5.2.3 Local and Regional

Malibu General Plan

The Malibu General Plan Conservation Element lists the following goals, objectives, policies, and implementation measures applicable to the portions of the District 29 project that are within the City (City of Malibu 2017):

- **Goal CON 2.** Cultural resources preserved and protected.
- **CON Objective 2.1.** Historical, cultural, and archeological resources preserved for future generations and scientific study.

Los Angeles County General Plan

The Los Angeles County General Plan Conservation and Natural Resources Element lists the following goals and policies applicable to the portions of the District 29 project that are within unincorporated areas of Los Angeles County (Los Angeles County 2015):

- **Goal C/NR 14.** Protect historical, cultural, and paleontological resources.
- **Policy C/NR 14.1.** Mitigate all impacts from new development on or adjacent to historical, cultural, and paleontological resources to the greatest extent feasible.
- Policy C/NR 14.4. Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
- **Policy C/NR 14.6.** Ensure proper notification and recovery processes are carried out for development on or near historical, cultural, and paleontological resources.

3.5.3 Impacts and Mitigation

3.5.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- A substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- A substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturbance of any human remains, including those interred outside of formal cemeteries.

3.5.3.2 Impacts

The proposed District 29 project includes construction and operation of water facilities including replaced pipelines, new pipelines, repair creek crossings, and one reservoir (tank).

Impact CUL-V.a.

Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

No impact.

Construction

Substantial adverse changes in a historical resource include demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired (PRC 5020.1(q)). CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance (CEQA Guidelines Section 15064.5(b)).

Known historical structures in the District 29 service area are listed above in Section 3.5.1.6, *Historic Sites*. No District 29 project facilities are planned for the immediate vicinity of any of these sites. All the sites are at least 0.6 mile away from the nearest improvement. Construction of District 29 project improvements would not directly impact historical structures, since locations at these sites would be avoided. None of the District 29 project improvement would be located close enough to the historical sites to be indirectly affected by construction vibration in a manner that could impact the integrity of historical structures in the area. Therefore, there would be no impacts to historical resources.

Operation

Operation of the District 29 project improvements would have no impacts to historical resources because of the distance from any of the historical resources.

Impact CUL-V.b.

Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation.

Construction

Sensitive cultural resources are well documented throughout the District 29 project area, including the city of Malibu and a portion of Los Angeles County east and northeast of the city. The known density of cultural resources in the project area creates a high potential for inadvertent discoveries.

Earthwork required for replacement and installation of pipelines would extend approximately 4 to 6 feet below ground (the depth of the existing pipeline). Similarly, the excavation for the Fernwood Tank would extend a maximum of 4 to 6 feet. For the Upper Encinal Tank, excavation from a hillside to a depth of approximately 20 feet, would be necessary to accommodate the larger reservoir. With the exception of the Upper Encinal Tank, most excavation would be in already disturbed soils. Any excavation could impact subsurface cultural resources. Ground disturbances during construction would potentially fracture, crush, demolish, and/or relocate cultural materials present at project sites. This would adversely alter potentially CRHR-eligible archaeological resources and their immediate surroundings such that the significance of the resources could be materially impaired. Although areas with ground-disturbing activities have all been disturbed before (with the exception of the Upper Encinal Tank improvement), the potential to encounter archaeological resources exists, although with low probability. Therefore, impacts on significant archaeological resources are considered significant. **Mitigation Measures (MM) CUL-1** and **CUL-2** would be implemented to reduce potential impacts on cultural resources to less-than-significant levels. For the creek crossings replacements included in the District 29 project, all construction would occur on and from existing bridges and would not include ground disturbance. No impacts to archaeological resources would occur at these locations.

Operation

Operation of the District 29 facilities would require periodic maintenance by LACDWP personnel, similar to existing conditions. Inspection and maintenance activities would not require earthwork. Therefore, operation of these facilities would have no impact on significant archaeological resources and no mitigation is required.

Impact CUL-V.c.

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

Less than significant with mitigation.

Construction

Native American burial sites are common along coastal areas of Malibu, and several high-profile incidents in recent decades advise caution when conducting ground-disturbing activities, even in areas where cultural resources have not yet been documented. The known density of cultural resources in the project area, many of which include burials, creates the potential for inadvertent disturbance of human remains. Earthwork required for replacement and installation of pipelines and the reservoir could affect known or unknown gravesites. Although areas with ground-disturbing activities have all been disturbed before, there still is the potential to encounter human burials. Therefore, impacts on human remains are considered significant. **MM-CUL-1** to **MM-CUL-3** would be implemented to reduce potential impacts to less-than-significant levels. For the creek crossings replacements included in the District 29 project, all construction would occur on and from existing bridges and would not include ground disturbance. No impacts to human remains would occur at these locations.

Operation

Operation of the District 29 facilities would require periodic maintenance by LACDWP personnel, similar to existing conditions. Inspection and maintenance activities would not require earthwork. Therefore, operation of these facilities would have no impact on significant human remains and therefore no mitigation is required. .

3.5.3.3 Mitigation Measures

Mitigation Measure CUL-1: Cultural Resources Monitoring Program

This mitigation measure is applicable to the following District 29 improvements only: PCH and Topanga Beach Drive Waterlines Improvements (Segments 1, 2, and 3) and Big Rock Bypass Improvements.

A Cultural Resources Monitoring Program must be developed once final designs are available and implemented during construction activities that have the potential to disturb native soils in archaeologically sensitive areas. The Cultural Resources Monitoring Program must include the following provisions:

- A qualified archaeologist must implement a monitoring and recovery program. The archaeologist must meet the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards for Archaeology.

- Native American tribes with an interest in the project area, as identified by the NAHC, must be contacted prior to the start of project construction. Qualified Native American monitors must be afforded an opportunity to be present during earthwork and excavations associated with the District 29 project.
- The qualified archaeologist(s) must provide cultural resources awareness training for all construction personnel prior to the start of construction. Construction personnel must be briefed on procedures to be followed in the event that a unique archaeological resource, historic-era building or structure, or human remains are encountered during construction. A training log must be maintained.
- The qualified archaeologist(s)/monitor(s) must be present during initial earthwork that has the potential to disturb native soils. Based on initial monitoring, the qualified archaeologist must determine the frequency and length of construction monitoring at each location. Monitoring at each specific project location would cease once excavation is completed. Monitoring of equipment installation, backfilling, or shallow excavations in areas of fill soils only will not be required. The monitor(s) must maintain a daily monitoring log that describes monitoring activities and results.

Mitigation Measure CUL-2: Discovery of Unknown Cultural Resources

If cultural resources are discovered in the course of excavation for project construction, the Construction Contractor must halt work in the immediate area of the find until a qualified archaeologist can evaluate the significance and distribution of the materials and identify future activities needed. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities must be conducted in consultation with relevant Native American tribes as determined by the NAHC.

Mitigation Measure CUL-3: Discovery of Human Remains

In accordance with California Health and Safety Code Section 7050.5 and PRC 5097.98, if human remains are found, the County Coroner must be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains must occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or are believed to be Native American, the Coroner must notify the NAHC in Sacramento within 24 hours. In accordance with PRC 5097.98, the NAHC must immediately notify those persons it believes to be the MLD of the deceased Native American(s). The MLD must complete their inspection within 48 hours of being granted access to the site and would then make recommendations as to the final disposition of the remains and associated grave goods.

3.5.3.4 Level of Significance after Mitigation

With implementation of **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**, impacts to cultural resources would be reduced to less-than-significant levels.

3.6 Energy

This section describes the existing conditions for energy consumption, the regulatory framework associated with energy, and the energy-related impacts that would result from the proposed project.

3.6.1 Environmental Setting

3.6.1.1 State and Regional Energy Resources and Use

California has a diverse portfolio of energy resources that produced 2,413.1 trillion British thermal units (BTUs)[1] in 2016.[2] Excluding offshore areas, the state ranked third in the nation in crude oil production in 2016, producing the equivalent of 1,064.7 trillion BTUs. The state ranked first in total renewable energy generation, with 934.0 trillion BTUs. Other energy sources in the state include natural gas (235 trillion BTUs), nuclear (198 trillion BTUs), and biofuels (30 trillion BTUs) (U.S. Energy Information Administration 2016).[3]

According to the U.S. Energy Information Administration (2016), California consumed approximately 7,830.3 trillion BTUs of energy in 2016. Per capita energy consumption (i.e., total energy consumption divided by the population) in California is among the lowest in the country, ranked 48th among all states, with 199.3 million BTUs in 2016. Motor gasoline accounted for the majority of energy consumption (24 percent), followed by natural gas (20 percent), distillate and jet fuel (16 percent), interstate electricity (10 percent), renewable energy (13 percent), and nuclear and hydroelectric power (3 percent), with the remaining 14 percent from a variety of other sources (U.S. Energy Information Administration 2016). The transportation sector consumed the highest quantity of energy (40 percent), followed by the industrial (24 percent), commercial (19 percent), and residential (18 percent) sectors (U.S. Energy Information Administration 2016).

Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the state's largest energy consumer, responsible for approximately 40 percent of the state's energy consumption in 2016 by BTUs (U.S. Energy Information Administration 2016). Petroleum-based fuels account for 91 percent of California ground transportation fuel use (California Energy Commission 2018:9). Gasoline is the most-used transportation fuel in California, with 9 percent of all gasoline consumed by light-duty cars, pickup trucks, and sport utility vehicles. In 2015, 15.1 billion gallons of gasoline were sold, according to the State Board of Equalization (California Energy Commission 2019). Diesel fuel is the second-largest transportation fuel used in California, representing 17 percent of total fuel sales. According to the state Board of Equalization, 4.2 billion gallons of diesel, including off-road diesel, was sold (California Energy Commission 2019).

As discussed in the *2017 Integrated Energy Policy Report*, California Energy Commission (CEC) staff projects that petroleum-based fuels will continue to represent the largest shares of transportation fuel demand through at least 2030. However, the CEC also projects that demand for gasoline will wane over time, primarily due to increases in fuel efficiency and electrification. Based on a middle-case

[1] One BTU is the amount of energy required to heat 1 pound of water by 1°F at sea level. BTU is a standard unit of energy that is used in the United States and is on the English system of units (foot-pound-second system).

[2] 2016 data are the most recent available at the U.S. Energy Information Administration website.

[3] No coal production occurs in California.

scenario, gasoline consumption in the state is predicted to fall from just under the current 15 billion gallons in 2016 to just over 12 billion gallons in 2030. During the same period, demand for jet and diesel fuel is projected to remain constant at approximately 4 billion gallons of gasoline equivalent for each fuel type (California Energy Commission 2018:212–213).

In the Southern California Association of Governments (SCAG) region, 9.3 billion gallons of fuel were consumed in 2012, which is projected to fall to an annual 6.8 billion gallons in 2040 with full implementation of the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. Despite a projected net increase in vehicle miles traveled in the region, fuel consumption reductions are anticipated to result from better fuel economy, the Advanced Clean Cars Program, reduced total daily hours of delays in the regional transportation system, and more alternative-fuel and zero-emissions vehicles on the road (SCAG 2016:3.6–26).

3.6.2 Regulatory Setting

3.6.2.1 Federal

Energy Policy Act (2005)

Intended to establish a comprehensive, long-term energy policy, the Energy Policy Act of 2005, implemented by the U.S. Department of Energy, addresses energy production in the U.S., including oil, gas coal, and alternative forms of energy. The act also addresses energy efficiency and tax incentive programs, including credits for the construction of new energy-efficient homes and production or purchase of energy-efficient appliances, and loan guarantees for entities that develop or use innovative technologies to avoid the production of greenhouse gases (GHGs).

3.6.2.2 State

California Energy Code

Title 24, Part 6 of the California Code of Regulations (24 CCR 6) describes California's energy efficiency standards for residential and nonresidential buildings. These standards were established in 1978, in response to a legislative mandate to reduce California's energy consumption, and have been updated periodically to include new energy efficiency technologies and methods. The California Energy Code requires compliance with energy-efficiency standards for all new construction, including new buildings, additions, alterations, and, in nonresidential buildings, repairs. This code is applicable to the two tank improvements.

California Energy Efficiency Standards for Residential and Nonresidential Buildings: Green Building Code (2011), Title 24 Updates (2014, 2017)

California has adopted aggressive energy efficiency standards for new buildings and is continuously updating those standards. In 2008, the California Building Standards Commission adopted the nation's first "green" building standards, which included standards for many aspects of the built environment apart from energy efficiency. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (24 California Code of Regulations). Part 11 established voluntary standards that became mandatory under the 2010 edition of the code: sustainable site development, energy efficiency (in excess of California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The

current energy efficiency standards were adopted in 2016 and took effect on January 1, 2017. The standards are to be updated periodically, usually every 3 years. The District 29 project would be subject to this code.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350 (De Leon, also known as the "Clean Energy and Pollution Reduction Act of 2015") was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) an RPS of 50 percent, and (2) a doubling of efficiency for existing buildings. The District 29 project would be subject to this act.

Senate Bill 100: The 100 Percent Clean Energy Act of 2018

SB 100 builds on SB 350, which required the following by 2030: (1) an RPS of 50 percent and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. SB 100 increases the 2030 RPS target set in SB 350 to 60 percent and requires an RPS of 100 percent by 2045. The District 29 project would be subject to this act.

3.6.2.3 Local and Regional

There are no local or regional plans, regulations, or policies applicable to the project.

3.6.3 Impacts and Mitigation

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operations.
- Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency.

Additionally, Appendix F to the State CEQA Guidelines recommends consideration of the following impact possibilities and potential energy conservation measures when preparing an EIR:

- The project's energy requirements and energy-use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and requirements for additional capacity.
- The effects of the project on peak- and base-period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and overall use of efficient transportation alternatives.

This EIR utilizes this guidance for evaluating the project's impacts.

3.6.3.1 Methods

Project-related energy consumption was estimated using emissions factors for off-road construction equipment and on-road vehicle trips laid out in the Road Construction Emissions Model (RCEM) (version 9.0.0) and project-specific parameters about construction schedule information, construction equipment that would be used, excavation and paving quantities, and truck trips provided by Los Angeles County Department of Public Works engineering staff. The outputs for carbon dioxide (CO_2) were converted to fuel equivalents and million British thermal units (MMBTU). Because there would be no change in operational characteristics of the pipelines and tanks once construction activities are complete, no change in operational energy consumption would occur; thus, operational energy is not discussed below.

3.6.3.2 Impacts

Impact EN-VI.a.

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

Less than significant.

Construction

Project-related construction activities would involve the use of diesel-powered heavy equipment and portable diesel generators, as well heavy-duty trucks for material hauling and delivery and light-duty vehicles for worker commute trips, almost all of which would involve the consumption of petroleum-based gasoline or diesel fuel. Temporary construction-period activities would require the consumption of the equivalent of 433,000 gallons of diesel fuel, or approximately 60,000 MMBTU (see Appendix B). In addition to direct fuel consumption, some battery-operated support equipment and electric equipment may be used and would rely on electricity from the existing grid. For a list of equipment that would be used in construction of the improvements see Appendix B. There would be an irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities.

Although construction activities would require energy consumption, the construction fuel requirements would be only during the 6-year construction period. Fuel required for construction would represent a negligible increase in regional demand and an insignificant amount relative to the more than 19 billion gallons of fuels sold in the state as of 2015 (California Energy Commission 2018 and 2019). Given the extensive network of fueling stations throughout the project vicinity, and the fact that construction would be short-term, no new or expanded sources of energy or infrastructure would be required to meet the energy demands of the project. All construction activities would be in the service of making water system improvements, and would therefore not be a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, construction impacts would be less than significant.

Operation

During operation, the energy used by the improvements would be similar to the existing conditions or even better. All the improvements represent replacement or repair to the existing systems. Energy use for these improvements would be limited to pumps and lighting at the tank sites. To the extent

that the improvements would use new pumps and lighting (many would not require pump replacement), the newer pumps and lighting would be more energy efficient than the existing components due to improving technology and energy requirements. No impact would occur.

Impact EN-VI.b.

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

No impact.

Construction

There are no state or local plans specifically related to the use of energy resources for construction activities. Construction activities comply with the requirements of the California Energy Code, the Green Building Code (and updates), Senate Bill 350, and Senate Bill 100, addressing energy efficiency and green building. Construction would involve the use of vehicles and equipment that consume diesel and gasoline. Construction equipment and vehicles are subject to the state's ongoing mobile sources certification program, which includes fuel efficiency standards (see Section 3.3, *Air Quality*. Because construction of the proposed project would not conflict with any state or local plans for renewable energy or energy efficiency, no impact would result.

Operation

There are no state or local plans specifically related to the use of energy resources during operation of the project. Therefore, the project would not conflict with any state or local plans for renewable energy or energy efficiency. No impact would result.

3.6.3.3 Mitigation Measures

No mitigation measures are required.

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3.7 Geology, Soils, and Paleontological Resources

This section includes impact analysis for geology, soils, and paleontological resources.

3.7.1 Environmental Setting

3.7.1.1 Geology

Geological Structure

The District 29 study area (study area) for geology is defined as the City of Malibu boundaries, expanded to encompass the Fernwood community and the neighborhood just east of the city limit, along Pacific Coast Highway (PCH) and the Coastline Drive community in unincorporated Los Angeles County. This study area is located within and adjacent to the steep Santa Monica Mountains (SMM), along 27 miles of east-west-trending coastline traversed and drained by valleys and canyons to the Pacific Ocean. Within the District 29 study area, elevations from sea level to approximately 3,335 feet above mean sea level (amsl).

The geology of the area is complex, lying in the northwestern corner of the Los Angeles basin at the juncture between two major geomorphic or structural provinces of southern California: the Peninsular Ranges province, consisting primarily of a northwest-oriented structural grain, and the Transverse Ranges structural province, which features a predominantly east-west-oriented structural grain. The geologic formation names in the greater Malibu area listed (Malibu 2017) include:

- Calabasas Formation
- Coal Canyon Formation
- Conejo Volcanics
- Llajas Formation
- Modelo Formation
- Monterey Shale
- Sespe Formation
- Topanga Canyon Formation
- Trancas Formation
- Tuna Canyon Formation
- Vaqueros Formation
- Zunia Volcanics

Rock types present in the District 29 area are also highly diverse, and include the following (Malibu 2017):

- Alluvium (creek beds)
- Beach/sand dune deposits
- Cemented sandstones
- Cherts
- Claystones
- Colluvium (foothills)
- Conglomerates
- Debris flow deposits
- Diatomaceous beds
- Mixed rock terrace deposits
- Mudstones
- Sandstones
- Shales
- Siltstones
- Various volcanic rocks

The geology in the study area may have also been affected by such movement methods as artificial fill, coastal deposition, debris flows, landslides, and stream deposition.

Seismicity

Active and Potentially Active Faults

The District 29 study area, like all of California, is seismically active. Numerous faults surround and traverse the greater Malibu area. Local and regional faults are discussed below (Malibu 2017). The Southern California region commonly experiences strong ground shaking as a result of earthquakes along active faults, which are part of a continuous, naturally occurring process that has contributed to the characteristic landscape of the region.

San Andreas Fault

Although it lies approximately 80 miles east of the study area, the southern segment of the San Andreas Fault, running from Tejon Pass to Cajon Pass, is considered capable of generating a maximum 8.0-magnitude[1] earthquake, which could generate significant ground shaking in the study area. This design earthquake is supported by the historical record, including the great 1857 Fort Tejon earthquake, estimated at 7.9 magnitude, and the more recent 1992 Landers earthquake of magnitude 7.4. The San Andreas Fault is part of the San Andreas system of northwest-striking, right-lateral faults and has a well-documented mean recurrence interval (average time between earthquakes) of approximately 130 years for great earthquakes (magnitude 8.0 or greater).

Anacapa (Dume)-Santa Monica Fault Zone

The Anacapa-Dume Fault is a near-vertical offshore escarpment that is nearly 2,000 feet locally, with a total length exceeding 62 miles. It occurs as close as 3.6 miles offshore at the western end of the study area, but trends northeast, where it merges with the offshore segment (or segments) of the Santa Monica Fault Zone, and 2 miles south of the Malibu Beach/Carbon Beach area. This fault is assumed responsible for generating the historic 1930 magnitude-5.2 Santa Monica earthquake, the 1973 magnitude-5.3 Point Mugu earthquake, and the 1979 and 1989 Malibu earthquakes, each magnitude 5.0. Analyses of the first-motion seismic waves produced by these latter three earthquake events suggests that the faults that produced them were north-dipping structures. The Anacapa-Dume Fault appears to be structurally linked to the Santa Monica fault zone.

Santa Monica Fault

The Santa Monica fault is interpreted as a 25-mile-long potentially active fault zone with features that imply at least Late Quaternary (within the late 500,000 to 1,000,000 years) displacement. The fault appears to be structurally linked to the Newport-Inglewood-Rose Canyon fault zone. It is also possible that the Anacapa (Dume)-Santa Monica fault zone is the westernmost segment of the Elysian Park fold and thrust belt, a buried, or *blind thrust*, fault zone forming the southernmost boundary of the Transverse Ranges. This buried fault zone was responsible for the 1987 magnitude-5.9 Whittier Narrows earthquake.

Newport-Inglewood Structural Zone

Located between 18 and 31 miles east of the study area, the Newport-Inglewood structural zone is considered active with historically recorded movement. The 1920 Inglewood earthquake (estimated

[1] In this document, *magnitude* means "moment magnitude," a measure of total energy released by an earthquake. It is considered more accurate than the traditional Richter scale measure (USDOI-USGS 2020).

magnitude 4.9) and the 1933 Long Beach earthquake (estimated magnitude 6.3) are thought to be the result of movement of this fault. This fault has right-lateral strike-slip displacement. .

Palos Verdes Fault Zone

The northernmost trace of the Palos Verdes fault zone, a northwest-striking, right-reverse slip fault, is located approximately 7.5 miles south of the study area. Its onshore segment forms the northwestern boundary of the Palos Verdes Hills and extends offshore into the Santa Monica Bay. This fault has right-lateral strike-slip displacement. The active portions of the fault are offshore. There has been no demonstrated activity on the northern portion of the fault in the Holocene epoch (approximately the last 11,000 years).

Ventura-Pitas Point Fault

The Ventura-Pitas Point fault is located approximately 20 miles north of the study area. It has a 6.2-mile onshore surface trace mapped and it extends offshore to the west for at least 24.4 miles. It was the probably source of a magnitude-7.1 earthquake in 1812, a magnitude-6.8 earthquake in 1925, and a magnitude-5.6 earthquake in 1978, all with epicenters offshore in the Santa Barbara Channel. The maximum credible earthquake assumed for the fault is magnitude 7.25.

Malibu Coast Fault Zone

The Malibu Coast fault zone, which runs through Malibu city limits in an east-west orientation onshore, subparallel to and along the shoreline, for a linear distance of about 17 miles, also extends offshore to the east and west, for a total length possibly exceeding 37.5 miles. Onshore, this fault extends from Sequit Point in the west to Carbon Beach in the east, although recent mapping suggests that the Flores thrust fault may conceivably represent an onshore extension of this fault zone, thus pushing its onshore eastern limits to the Big Rock/Las Tunas beach areas. The onshore Malibu Coast fault zone involves a broad, wide zone of faulting and shearing as wide as 1 mile.

San Fernando Fault

Located 14.8 miles northeast of the study area, at the northern end of the San Fernando Valley, the San Fernando fault is a thrust fault similar in length, displacement, and character to the Malibu Coast fault zone and other Transverse Ranges-type faults. This fault generated the 1971 San Fernando earthquake of magnitude 6.6, which caused strong ground shaking in the Malibu area and was the impetus behind the 1972 Alquist-Priolo Earthquake Fault Zoning Act legislation. The fault is estimated to be able to yield a maximum credible earthquake of magnitude 6.5, based essentially on its mapped 10.5 miles of surface rupture during the 1971 event. It may also be structurally linked with the Sierra Madre fault zone to the east, which has similar sense of displacement and a maximum credible earthquake of magnitude 7.5. A maximum earthquake magnitude of 7.0 is estimated in the Malibu General Plan. On January 17, 1994, an estimated magnitude-6.7 earthquake occurred in the Northridge/Reseda area of the San Fernando Valley; preliminary analysis indicates that this earthquake was not part of the San Fernando fault but was associated with the Oak Ridge or Santa Susana fault zones.

Seismic Risks

Faults generally produce damage in two ways: surface rupture and ground shaking. Other risks associated with earthquakes are liquefaction and subsidence.

Surface Rupture

Fault rupture is the result of the movement along the fault in an earthquake. Surface rupture is a fault rupture that extends to the earth surface. Although new faults may develop during a seismic event, significant fault rupture is generally expected to occur along preexisting faults.

Surface rupture is potentially damaging to any structures that straddle the fault trace. It cannot be prevented; therefore, mitigation of this hazard involves identifying major faults that exhibit evidence for potential rupture in the near future and avoiding construction over their surface traces, both of which can help prevent damage from predicted rupture locations; however, as stated above, there is always the potential for surface rupture in an unexpected location. In addition, although preventing buildings and similar structures from being built along predicted fracture lines, it is not possible for linear structures that must cross faults, such as roadways, rail lines, pipelines, and other infrastructure.

Surface rupture could occur at the Malibu Coast fault zone and individual fault splays within the study area. The Malibu Coast fault zone has not been officially designated as an active fault zone by the State of California and no special studies zones have been delineated along any part of the fault zone under the 1992 Alquist-Priolo Earthquake Fault Zoning Act. However, evidence for Holocene activity (movement in the last 11,000 years) has been established in several locations along individual fault splays within the fault zone. Due to such evidence, several fault splays within the onshore portion of the fault zone are identified as active in the County of Los Angeles Seismic Safety Element (Malibu 2017).

Ground Shaking

Ground shaking (also known as ground motion) is a result of the seismic waves produced by a fault-rupture event. Ground shaking causes movement on all three axes: up and down, left and right, and forward and back. It covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. Ground shaking at a given site is modified by a number of factors, including focal depth, proximity to projected or actual fault rupture, fault mechanism, duration of shaking, local geologic structure, source direction of earthquake, underlying earth-material characteristics, and topography. All these factors make it difficult to accurately predict potential ground motions at a given site in the geologically and topographically complex southern California area. Ground motions are expressed as a fraction of acceleration due to gravity, for which a 10-percent probability exists that they will be exceeded in 50 years. The horizontal peak acceleration that corresponds to the maximum considered earthquake for the project area ranges from 0.82g to 0.93g.[2]

Ground shaking is the primary cause of earthquake damage to human-made structures, and the full or partial collapse of structures is the greatest cause of injury and death from earthquakes. Some areas are particularly to ground-shaking effects because the ground under these areas is relatively soft, and soft soils amplify ground shaking. Examples include the widespread damage caused by the 1906 and 1989 earthquakes in the San Francisco area and the 1994 Northridge earthquake in Los Angeles County. Surface geology provides only a rough estimate of areas that would be most affected by ground shaking. Soft soils that overly stiffer soils or bedrock tend to have limited ability amplify ground motion.

[2] "g" is a measure of the net acceleration of gravity. The average gravity from a person standing on the earth is approximately 1g in meters per second squared.

The degree to which ground shaking causes damage to any particular structure is also a factor of the strength of that structure. These include the age and state of repair of the structure, the inherent strength, rigidity, and stability of the structure's design, design characteristics or seismic resilience devices intended to reduce the damaging effects of shaking, the materials used to build the structure, the quality of building construction, and the size of the earthquake the structure was originally designed to withstand (Seismic Resilience 2019).

Liquefaction and Subsidence

Liquefaction is a process by which water-saturated sediment suddenly loses strength, which commonly accompanies strong ground motions caused by earthquakes. During an extended period of ground shaking or dynamic loading, water pressures within the pores of soil increase and the ground is temporarily altered from a solid to a liquid state. Liquefaction is most likely to occur in unconsolidated, sandy sediments that are water-saturated within less than 30 feet of the ground surface. Liquefaction risks occur in many locations within the study area, primarily near the beaches and in floodplains of the larger streams (Malibu 2017).

Subsidence, the settling of the ground surface due to the compaction of underlying unconsolidated sediment, is most common in uncompacted soils, thick, unconsolidated alluvial material, and improperly constructed artificial fill. Subsidence is typically associated with the rapid removal of large volumes of groundwater or oil. It is also a secondary hazard associated with seismic activity, as ground shaking may cause the settling of loose, unconsolidated grains. Due to the fault zones and the unconsolidated alluvial sediments underlying much of the study area, the potential for seismically induced subsidence is considered high (Malibu 2017).

Landslides

Landslides or unstable slopes are the downslope movement of geologic materials because of slope, rock type, and erosion potential or due to ground shaking (seismically induced landslides). Improper grading, rainfall, and irrigation saturating unstable soils can also increase landslides. Landslides are an important and widespread geologic hazard throughout the study area (Los Angeles County 2016). Over 250 landslides have been mapped in the Malibu area, ranging in size from 8 acres to 220 acres. Public utilities have been affected, particularly those underground (Malibu 2017). Major landslide areas near the District 29 project area include the Las Tunas Beach, Eagle Pass-Las Flores, and Carbon Beach slides.

Typically, landslides take the form of either a block glide, in which slope failure occurs along a flat surface, or as a slump, in which failure occurs along single or multiple surfaces, and the mass of material slides in a rotational motion. The stability of slopes is related to a variety of factors, including the slope's steepness, the strength of geologic materials in terms of resistance to the downslope stress of gravity, the characteristics of bedding planes, joints, and faults, surface water and groundwater conditions, changes in loading, changes in vegetation, exposure to weathering, and susceptibility to seismic disturbances. Landslides may be present as deep-seated and shallow or as debris and mudslides (Malibu 2017).

Deep-seated landslides involve large slope failures of deep, unconsolidated rocky material covering the bedrock, and/or weather rock. One deep-seated landslide present in the study area is located west of Corral Canyon, where a slide 1,500-feet wide could affect PCH (Los Angeles County 2016).

Shallow landslides are usually less than 10 feet deep, but may be several acres in area. There is an area of shallow, coalescing slides near Malibu Road, between Malibu Beach and Corral Canyon, a distance of about 3 miles.

Debris flow and mudslide events have been experienced in Topanga Canyon, Las Flores Canyon, and others, and will occur again in the future. The many canyons that drain the SMM and cross through the District 29 project study area to empty into the ocean provide avenues for future debris/mud flow events during wet winters and intense rainstorms. These phenomena are potentially deadly to the public because many of the mountain failures that contribute soils and debris to the canyon bottoms tends to occur during the early morning hours, following intense rainfall, most likely during the night before. The public tends to be inside and asleep, not expecting catastrophic hillside failures to affect them (Malibu 2017).

Past storm tracks that caused significant debris flows in the 1982–83 storms indicate that intense, continuous rainfall exceeding 0.25 inches per hour can, and does, occur in the SMM. More recently, debris flows and mudslides occurred in the winter after the Woolsey Fire in November 2018, a winter characterized by frequent heavier-than-normal rainstorms, leading to flash floods. These flows affected the canyons and closed PCH at various times for clearing rocks, mud, and debris.

3.7.1.2 Soils

Soil Types

Soils are divided by the U.S. Department of Agriculture (USDA) into elaborate classifications with several levels (i.e., order, suborder, great group, subgroup, family, and series), determined by characteristics such as the number of horizons, color, thickness, texture, erosion, slope, organic content, and depth to hardpan differentiate soil series. Soil series are the most frequently used unit of soil classification. The greater Malibu area has been classified into 22 soil series by USDA's Natural Resources Conservation Service (NRCS) (previously known as the Soil Conservation Service [SCS]). The District 29 project study area is located on the soils series associations and complexes listed in Table 3.7-1 (USDA NRCS 2006a)

Table 3.7-1. Descriptions of Soils in Study Area

Soil Series/Associations/ Complexes	Description
Chumash-Malibu-Boades Association, 30–75 percent slopes	Chumash 33 percent; Malibu 24 percent, Boades 24 percent, minor components 16 percent Very shallow to moderately deep, steep and very steep, well-drained and moderately well-drained soils derived from shale and sandstone; on hills and mountains
Mipolomol-Topanga-Sapwi Association, 30-75 percent slopes	Mipolomol 38 percent, Topanga 38 percent, Sapwi 8 percent, minor components 16 percent Shallow and moderately deep, steep and very steep, well-drained soils formed in shale, sandstone, and slate; on hills and mountains

Soil Series/Associations/ Complexes	Description
Zumaridge-Rock Outcrop-Kawenga Association, 30–75 percent slopes	Zumaridge 28 percent, Rock Outcrop 24 percent, Kawenga 10 percent, minor components 38 percent Shallow and deep, steep and very steep, well-drained soils derived from sandstone, and rock outcrop; on hills and mountains
Cumulic Haploxerolls-Elder-Fluvaquents Complex, 0–9 percent slopes	Cumulic Haploxerolls 58 percent, Elder 17 percent, Fluvaquents 9 percent, minor components 16 percent Very deep, nearly level to gently rolling, well-drained, and very poorly drained soils, that formed in alluvium derived from volcanic and sedimentary material; in .drainageways
Urban Land-Xerosthents Landscape Complex, 0–9 percent slopes	Urban land 69 percent, Xerosthents landscaped 29 percent, minor components 2 percent Urban land and shallow to very deep, level to moderately sloping, well-drained soils derived from sedimentary rock; on hills, mountains, valleys, and alluvial fans

Source: USDA NRCS 2006b

Expansive Soils

Expansive soils are soils that expand when water is added and shrink when they dry out. This continuous change in soil volume can cause structures built on this soil to move unevenly and crack. Expansive soils have caused millions of dollars in damages in California, particularly to single-family residences and private property improvements.

Each of the different geologic formations mapped in the Malibu area consists of various units that may possess expansive potential. Geologic units mapped as colluvium or slopewash would commonly be expansive in nature. The terrace deposits shown along the coast generally also contain expansive soils.

Collapsible and Compressible Soils

Collapsible soils are characterized as typically young, loose deposits that have the potential for significant abrupt volumetric change when wetted. Compressible soils are similar, with the potential to decrease in volume when subjected to a load. Potentially collapsible and compressible soils may be present in the Malibu area, where geologic units of alluvium or colluvium are present at the lower end of sloping terrain, where it begins to flatten and become less steep, but particularly where debris-flow deposits have been recognized. Old deposits from debris flows in the Point Dume-Zuma Beach area are believed to have collapsible soils. Similar types of deposits are likely along Las Flores Canyon, Malibu Creek, Zuma Canyon, Trancas Canyon, and Topanga Canyon. Compressible soils are likely in the Malibu Lagoon area, along Malibu Creek, Dume Canyon, Trancas Canyon, and Topanga Canyon. Upper elevations are unlikely to have collapsible or compressible soils.

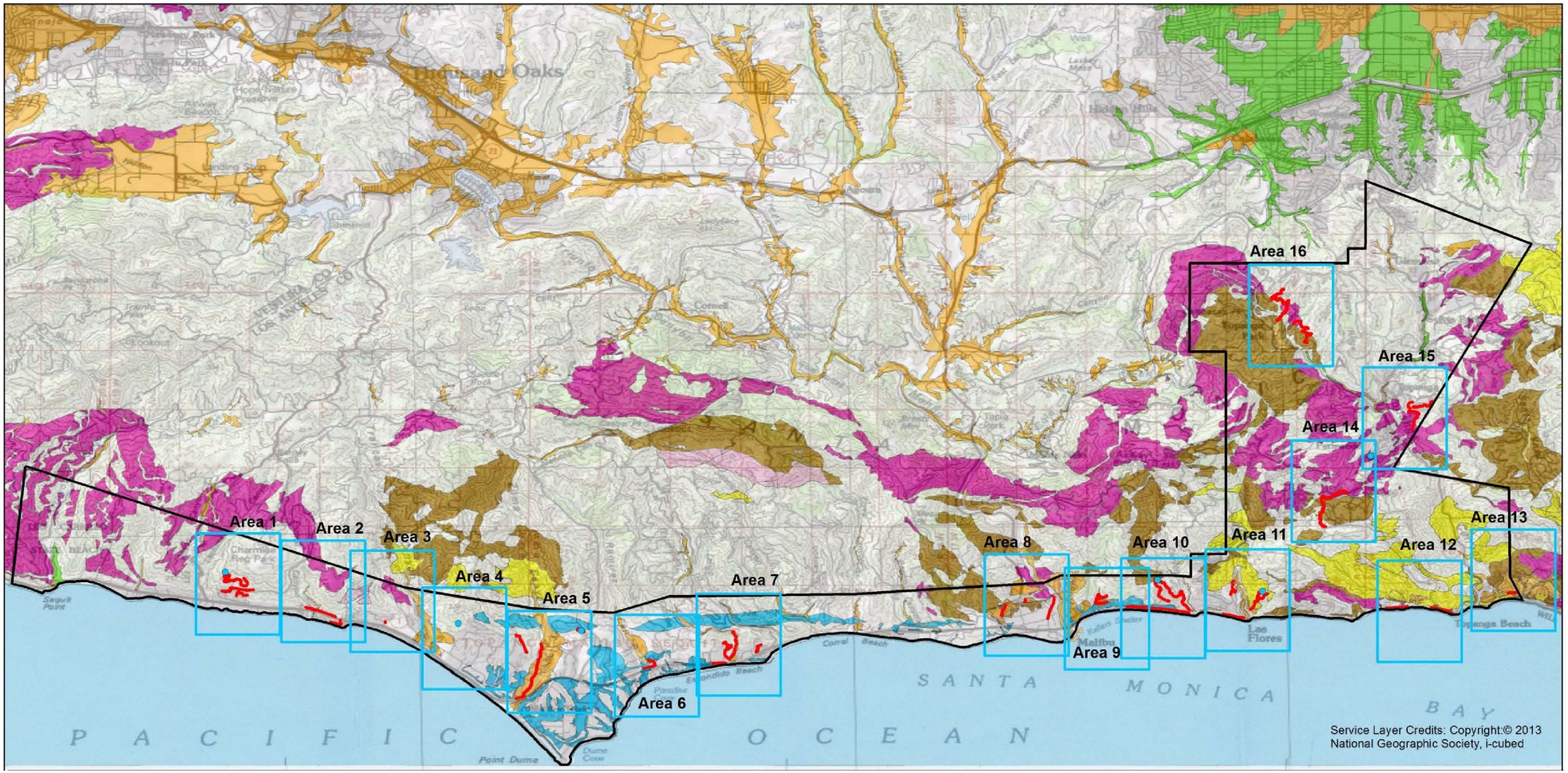
3.7.1.3 Paleontological Resources

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources—the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints, from a previous geologic period—represent a limited, non-renewable, and

impact-sensitive scientific and educational resource. Fossil remains, such as bones, teeth, shells, and leaves, are found in geologic deposits (i.e., rock formations) where they were originally buried.

Los Angeles County is one of the richest areas in the world for both fossil marine vertebrates and land vertebrates from sediments deposited over the last 25 million years. Many fossilized remains are found in sedimentary rocks of the SMM that have been tilted and uplifted.

Several paleontologically sensitive locations with the potential to contain vertebrate fossils are found within the District 29 project study area (Figure 3.7-1, to follow). Sedimentary rock formations in or near the project study area that are known to contain vertebrate fossil materials include Older Quaternary Alluvium, Upper Topanga, Lower Topanga, Monterey, Tuna Canyon, and Sespe formations.



District 29 Water System

Study Areas

Llajas Formation

Monterey Shale

Old alluvium

Santa Susana Formation

Sespe Formation

Topanga Canyon Formation

Tuna Canyon Formation

Young alluvium

0 1.25 2.5 5 Miles

Source: Garcia and Associates

Document Path: \\PDCCITRDSGIS1\Projects_1\LADPW\00489_16_LAC_Waterworks_Dist29\mapdoc\PaleoFig3_7_1_Paleo_Sens.mxd

ICF

Figure 3.7-1
Paleontologically Sensitive Areas
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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3.7.2 Regulatory Setting

3.7.2.1 Federal

Earthquake Hazards Reduction Act of 1977 and National Earthquake Hazards Reduction Program Act of 1990

This Earthquake Hazards Reduction Act of 1977 is intended to reduce the risks to life and property from future earthquakes in the U.S. through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives. The program aims to improve understanding, characterization, and prediction of hazards and vulnerabilities, improve building codes and land use practices, reduce risks through post-earthquake investigations and education, develop and improve design and construction techniques, improve mitigation capacity, and accelerated application of research results. The program is administered by the Federal Emergency Management Agency (FEMA).

Soil and Water Resources Conservation Act of 1977

The Soil and Water Resources Conservation Act of 1977, as amended, provides the USDA with broad strategic assessment and planning authority for the conservation, protection, and enhancement of soil, water, and related natural resources. Through this act, USDA appraises the status and trends of soil, water, and related resources on non-federal land and assesses their capability to meet present and future demands.

3.7.2.2 State

Alquist-Priolo Geologic Hazards Zone Act of 1972

The State of California passed the Alquist-Priolo Geologic Hazards Zone Act of 1972, later renamed the Alquist-Priolo Earthquake Fault Zoning Act, to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. This act prohibits development of structures for human occupancy within 50 feet of an active fault that has ruptured the ground surface. There are no Alquist-Priolo Fault zones within the study area, and the proposed project includes no habitable structures.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (1990) aims to reduce the threat of seismic hazard to public health and safety by identifying and mitigating seismic hazards. Through this act, the California Department of Conservation, Division of Mines and Geology, delineates seismic hazard zones. State, county, and city agencies are directed to utilize such maps in land use and permitting processes. The act also requires geotechnical investigations particular to the site be conducted before permitting occurs on sites within seismic-hazard zones.

California Building Code

The California Building Code establishes the minimum requirements to safeguard public health, safety, and general welfare through structural strength, means of access and egress, stability, sanitation, lighting, ventilation, energy conservation, fire and other hazards, and safety of emergency responders. The most recent update to the code was in 2016.

14 CCR 4307 and 4309

California Code of Regulations, Title 14, Section 4307, prohibits any person from destroying, distributing, or removing paleontological features. Section 4309 states that the State Department of Parks and Recreation (DPR) may grant a permit to remove, treat, disturb, or destroy paleontological materials.

3.7.2.3 Local and Regional

Los Angeles County General Plan: Safety Element

The Los Angeles County General Plan has a number of seismic and geotechnical hazards listed in its Safety Element. None of these have applicability to the proposed project because they pertain to habitable buildings, development, unreinforced masonry structures, and similar issues.

Malibu General Plan: Safety Element

The Malibu General Plan has a number of seismic and geotechnical hazards in its Safety Element. None of these have applicability to the proposed project because they pertain to new development such as housing, commercial, or industrial projects.

Malibu General Plan: Conservation Element

The Malibu General Plan has the following goal, policy, and implementation measure in its Conservation Element:

- **CON Goal 2**: Cultural Resources Preserved and Protected:
    - **CON Policy 2.1.1**: The City must identify, designate, protect, and preserve areas, sites, or structures of historic, cultural, paleontological, and/or archeological significance.
        - **CON Implementation Measure 79**: Requires site surveys to be performed by qualified technical personnel for projects located in areas identified as archaeologically/ paleontologically sensitive. Data derived from such surveys must be used to formulate mitigation measures for the project, and all such feasible mitigation measures must be applied to the project.

Malibu Local Coastal Program Land Use Plan

The Land Use Plan of the Malibu Local Coastal Program includes the following policies related to paleontological resources:

- **Policy 5.60**: New development must protect and preserve archaeological, historical, and paleontological resources from destruction and avoid and minimize impacts on such resources.

- **Policy 5.61**: Where development would adversely affect archaeological or paleontological resources, as identified by the State Historic Preservation Officer (SHPO), reasonable mitigation measures must be required.

Los Angeles County Building Code

The Los Angeles County Building Code incorporates by reference the 2016 California Building Code, except as changed or modified. The last update to the code was in 2017.

Malibu Building Code

The Malibu Building Code adopts the California Building Code, except as changed or modified by Los Angeles County, and as amended by the City of Malibu.

3.7.3 Impacts and Mitigation

3.7.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Potential substantial adverse effects, including the risk of loss, injury, or death involving: (1) 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 a known fault; (2) strong seismic ground shaking; (3) seismic-related ground failure, including liquefaction; or (4) landslides.
- Substantial soil erosion or the loss of topsoil.
- Placement of project-related facilities on a geologic unit or soil that is unstable or would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Placement of project-related facilities 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.
- Placement of project facilities on soils incapable of adequately supporting the use of septic tanks or alternative wastewater-disposal systems in areas where sewers are not available for the disposal of wastewater.
- Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.

3.7.3.2 Impacts

The impacts analysis includes an evaluation of how each improvement site may be subject to specific hazards based on geology and soils conditions. Table 3.7-2 provides improvement-specific geologic hazards. The entire project would be subject to some level of ground shaking.

Table 3.7-2. Potential Geologic Hazards at District 29 Project Improvement Locations

Improvement	Geologic Hazards [1]
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	Landslides Expansive soils
Coastline Drive 12-inch Waterline Improvements	Landslides Expansive soils
Fernwood Tank Improvement	None
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	Landslides Liquefaction Expansive soils
PCH and Topanga Beach Drive Waterline Improvements (Segment 1)	Landslides Liquefaction Expansive soils Compressible soils/collapsible soils
PCH and Topanga Beach Drive Waterline Improvements (Segment 2)	Liquefaction Expansive soils Compressible soils/collapsible soils
PCH and Topanga Beach Drive Waterline Improvements (Segment 3)	Crosses Malibu Coast fault zone/possible fault rupture Liquefaction Expansive soils
Emergency Source of Water Supply Connection (Las Virgenes Connection)	Within 1000 feet of Malibu Coast fault zone/possible fault rupture Expansive soils
Big Rock Bypass Improvements	Landslides Expansive soils
Upper Encinal Tank Improvement	Within 1000 feet of Malibu Coast fault zone/possible fault rupture Expansive soils

Source: Malibu 2017
[1] Strong ground shaking is a geologic hazard that would potentially affect every improvement site.

Impact GEO-VII.a.i.

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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 a known fault? (Refer to Division of Mines and Geology Special Report 42.)

Less than significant.

Construction and Operation

The potential for fault rupture at all of the improvements to some degree. Three of the improvement sites cross the Malibu Coast fault zone, and two others are within approximately 1,000 feet of it, but no structures intended for human occupancy are present. All the remaining improvements could be susceptible to fault rupture from unknown, poorly known, or unmapped faults, which are thought to

be numerous in the greater Malibu area. Table 3.7-3 shows which improvements fall into these three risk categories.

Table 3.7-3. Fault Rupture Risk at District 29 Improvements

Fault Rupture Risk	Improvement
Improvements that cross the Malibu Coast fault zone and are susceptible to fault rupture	• Carbon Canyon Road and Carbon Mesa Road Waterline Improvements • District 29 Creek Crossing Repairs – Coal (Carbon) Canyon Creek only • PCH and Topanga Beach Drive Waterline Improvements – Segment 3 only
Improvements within approximately 1,000 feet of the Malibu Coast fault zone and would be susceptible to fault rupture	• Emergency Source of Water Supply Connection (Las Virgenes Connection) • Upper Encinal Tank Improvement
Improvements that are not located within or near a known fault or fault zone, but could be susceptible to fault rupture from unknown, poorly known, or unmapped faults	• Coastline Drive 12-inch Waterline Improvement • District 29 Creek Crossing Repairs – all repairs except Coal (Carbon) Canyon Creek • Fernwood Tank Improvement • PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) • PCH and Topanga Beach Drive Waterline Improvements – Segments 1 and 2 • Big Rock Bypass Improvements

Although pipelines could be damaged during a seismic event, resulting in fault rupture and requiring repairs, the breaks would not pose substantial threats to people or properties. All but one of the District 29 project improvements would replace existing pipes and reservoirs in the same location as in the existing conditions, with no increase in risks.

The Emergency Source of Water Supply Connection (Las Virgenes Connection), a new pipeline, is near a known fault that could result in ground fracture. However, the potential for the pipeline to result in substantial damage from water if it were damaged from fault rupture is low, because it is located in an undeveloped area. The houses in the sparse downslope development are all located outside of drainages, so the natural course for the water would be unlikely to affect these residences.

The District 29 improvements would not directly expose people in new structures to the effects of fault rupture. All the improvements would replace pipelines and reservoirs in the same locations as the existing condition, except for the new pipeline discussed below. Therefore, there would be minimal change from the existing conditions.

Because the facilities in the District 29 project would all be in the same location as existing facilities or located in an undeveloped area, impacts to people or structures from flooding caused by fault rupture would be less than significant.

Impact GEO-VII.a.ii.

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less than significant.

Construction and Operation

The entire project study area, as well as most of California, is susceptible to strong seismic ground shaking, which could result in the failure of the proposed pipelines and tanks, in turn potentially resulting in adverse effects, including the risk of loss, injury, or death. For this analysis, the improvements are divided into three categories because the impacts would be the same for the improvements in that category.

Replacement of Existing Pipelines

This category includes the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, District 29 Creek Crossing Repairs, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), and Big Rock Bypass Improvements.

The proposed pipelines could be damaged from ground shaking during a seismic event and would need to be repaired. However, the damaged pipelines would not pose a substantial risk to people or properties. The replacement of the pipelines in the same location means that they would not be substantially different from the existing conditions, and the risks from the potential damage from ground shaking would be the same or slightly improved. Because the aging pipes would be replaced with state-of-the-art pipelines and pipeline connections with the flexibility to accommodate movement, as required by the California Building Code, risks would be slightly reduced. To the extent these pipelines would be less susceptible to damage from ground shaking, fire-fighting capacity would also be improved.

New Pipeline

This category includes only one improvement that could be affected by ground shaking, the Emergency Source of Water Supply Connection (Las Virgenes Connection), a new pipeline. If damaged, the release of water would not result in substantial increase risks because, as discussed above for ground rupture, the pipeline is in a generally undeveloped area with sparse downslope development and located above drainage courses, so the increased risk over existing conditions would be minimal. In addition, ground shaking would be less likely to expose people to risks from pipe damage because the surrounding area is undeveloped, and the permeable soils would be expected to absorb much of the water from the broken pipeline. This new pipeline's purpose is to provide redundancy for the existing Las Virgenes Connection; thus, it would improve the potential to have fire-fighting capacity following a disaster.

Tank Replacements

The two new tanks at Fernwood and Upper Encinal would also use technological improvements and comply with strengthened building codes, resulting in tanks that are more likely to survived ground shaking than the tanks they are replacing.

Conclusion

Because the facilities in the District 29 project would replace existing facilities in the same location, or would be located in an undeveloped area, adverse impacts to people or structures related to ground shaking affecting the replaced or new facilities would be less than significant.

Impact GEO-VII.a.iii.

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less than significant.

Construction and Operation

Improvements in Soils Susceptible to Liquefaction

The following improvements are located in soils that are susceptible to liquefaction: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, District 29 Creek Crossing Repairs, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), and PCH and Topanga Beach Drive Waterline Improvements. Because all the pipeline improvements in areas identified with liquefaction risks would replace existing facilities, they would not exacerbate risks, and the completed improvements would be similar to the existing condition. To the extent that the replaced pipelines project would reduce the potential for pipeline leaks or failure to saturate susceptible soils, liquefaction risks would be slightly reduced. Impacts would be less than significant.

Improvements Not in Soils Susceptible to Liquefaction

The following improvements would be located in areas not known to include liquefiable soils: Coastline Drive 12-inch Waterline Improvements, Fernwood Tank Improvement, Emergency Source of Water Supply Connection, Big Rock Bypass Improvements, and Upper Encinal Tank Improvement. Therefore, they would not result in potential substantial adverse effects involving seismic-related ground failure, including liquefaction. These improvements would have no impacts.

Impact GEO-VII.a.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.

Construction and Operation

In the event of an earthquake or heavy precipitation, steep slopes and slope instability can potentially result in landslides. The study area has many known landslide areas that could move after intense rainfall or earthquake. The areas downstream of canyons or drainages are susceptible to mud and debris flows.

Pipelines and Crossing Repairs

All pipeline replacement or repair improvements would be within existing paved roadways in developed areas with limited topographic relief. None of the proposed District 29 project pipeline improvements would involve modification of slopes. However, some pipelines may need to cross existing landslides, where ongoing earth movement is known. Table 3.7.4 shows the known landslide areas and the improvements and repairs that may cross these known slides. The risk condition for the proposed facilities would be the same as the existing condition because they would be in the same location as the existing facilities. Impacts related to pipeline improvement and crossing repairs that would cross known landslides would be less than significant. Other pipeline improvements and crossing repairs could cross unknown or unmapped landslides. The risk condition of the proposed pipelines and crossing repairs would be the same as that for the existing condition, and impacts would also be less than significant.

Table 3.7-4. Landslide Risks for District 29 Pipelines and Crossing Repairs

Known Landslide	Improvement
Las Tunas Beach Slides	• Big Rock Bypass Improvement • District 29 Creek Crossing Repairs – Pena Canyon Creek
Eagle Pass-Las Flores Slide	• PCH and Topanga Beach Drive Improvement (Segment 2) • District 29 Creek Crossing Repairs – Las Flores Canyon Creek
Carbon Beach Slide	• PCH and Topanga Beach Drive Improvement (Segment 3)

Tank Improvements

The Fernwood Tank Improvement, located on top of a hill, would replace two existing tanks with one larger tank on the same location. Only minor grading is anticipated, and it would have no effect on slopes. There are no known landslides in this area. None of the construction would exacerbate existing risks because the construction would not alter slopes. The new tank would replace the aging and deteriorating tank, reducing the chances of a tank failure that could trigger local landslides. Therefore, the potential for adverse impacts to the public or structures would be less than significant.

The Upper Encinal Tank Improvement is located on a natural terrace on the side of a ridgeline. There are no known landslides in this area. The new, larger tank would replace a smaller tank in the same location. Grading is anticipated to create a larger pad for the larger tank, cutting into the existing slope. The soils are stable in this area grading and will create a gentle slope, which would not cause landslides because of modern grading methods required by Los Angeles County. The new tank would replace the aging and deteriorating tank, reducing the chances of a tank failure that could trigger local landslides. There are no nearby houses or other development that would be affected by minor landslides from the side. Therefore, the potential for adverse impacts to the public or structures would be less than significant.

Impact GEO-VII.b.

Would the project result in substantial soil erosion or the loss of topsoil?

Less than significant.

Construction

During construction, Los Angeles County Best Management Practices (BMPs) would be incorporated into the project, as discussed in detail in Section 3.10, *Hydrology and Water Quality*. Therefore, impacts related to soil erosion or the loss of topsoil would be less than significant during construction.

Operation

The post-construction condition for all District 29 pipeline improvements and crossing repairs would not be substantially different from the existing condition. All the replacement pipelines would be in the same locations as the ones they would replace, with the street paving on top. The crossing repairs would hang from the bridge crossings at the same location as the existing pipes. These pipes will be state-of-the-art pipelines, less likely than the existing ones to fail and potentially result in flooding that could cause erosion. Therefore, operational impacts resulting from the replacement pipelines and crossing repairs would also be less than significant.

The Emergency Source of Water Supply Connection (Las Virgenes Connection) would be a new pipeline, located underground in Encinal Canyon Road. Operation of this new pipeline would be unlikely to cause any erosion because it would use state-of-the-art flexible piping and be covered with pavement. If it were to fail, any erosion would be confined to local areas and nearby drainages. The Encinal Canyon area is generally undeveloped rolling to steep hills. There is no nearby development, and the small amount of development in the downslope areas is not located in drainages. There is no agriculture in the area. Therefore, the new pipeline would result in less-than-significant impacts.

The Fernwood Tank Improvement would replace two existing aging and deteriorating tanks. The state-of-the-art tank would be unlikely to fail and result in erosion, thus reducing the risk of erosion over the existing condition. The Upper Encinal Tank would also replace an aging tank with a new, state-of-the art tank, which would also reduce the potential for erosion due to tank failure. In addition, the downslope areas are not developed or used for agriculture. Therefore, both tank improvements would result in less-than-significant impacts related to erosion and loss of topsoil.

Impact GEO-VII.c.

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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than significant.

Construction and Operation

See Impact GEO-VII.a.iv for a discussion of landslides. The risk of the proposed facilities would be the same as the existing condition, so the potential for adverse impacts to the public or structures would be less than significant.

See Impact GEO-VII.a.iii for a discussion of liquefaction. Lateral spreading and is most often associated with liquefaction, especially in inappropriately designed artificial fill. Liquefaction is not a factor for the only new facility (within existing roadway ROW), so lateral spreading at this new construction site is not expected to be a factor either. The condition of the proposed facilities where the liquefaction or lateral spreading risk may be present would be the same as the existing condition, so the potential for adverse impacts to the public or structures would be less than significant.

Collapsible and compressible soils can be the causes of soil instability and subsidence and the inability to support structures. The PCH and Topanga Beach Drive Waterline Improvements (all segments) would be located in areas susceptible to risks from these soils. Because these pipeline improvements would replace existing facilities, they would not exacerbate risks, and the completed improvements would be similar to the existing condition. To the extent that the replaced pipelines would reduce the potential for pipeline leaks or failures that could saturate susceptible soils, risks of soil instability would be slightly improved. Impacts would be less than significant.

Impact GEO-VII.d.

Would the project result 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?

Less than significant with mitigation.

Construction

District 29 Creek Crossing Repairs

The crossing repairs would be to pipelines that are attached to bridges. Construction would not disturb soil. Therefore, the crossing repairs would have no impact related to expansive soils. No mitigation would be required.

Replacement Pipeline Improvements

Construction of replacement pipelines within potentially expansive soil areas would occur at the following locations: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, PCH and Topanga Beach Drive Waterline Improvements, and Big Rock Bypass Improvements. Construction would occur in disturbed soils and involve removing the existing pipelines, replacing them with new, state-of-the-art pipelines more resistant to the effects of expansive soils, if present. Otherwise, conditions would be the same as the existing condition. Impacts resulting from replacement pipelines would be less-than-significant. No mitigation would be required.

New Pipeline Improvements

The Emergency Source of Water Connection Improvement would be a new pipeline, constructed in existing roadway ROW in an area known for expansive soils. Appropriate geotechnical practices would be incorporated into the design and construction. However, the effect of a poorly engineered pipeline in expansive soil could result in damage to the roadway, affecting transportation, which would be a significant impact. **Mitigation Measure (MM) GEO-1** includes evaluation of site-specific soils during design to ensure expansive soils would be avoided or mitigated. Therefore, impacts of

the new pipeline related to expansive soils would be reduced to less-than-significant levels with implementation of mitigation.

Fernwood Tank

The Fernwood Tank Improvement is not located in an area with expansive soils. Therefore, the new tank would not be susceptible to the effects of expansive soils. Construction of the Fernwood Tank Improvement would result in no impacts related to expansive soils. No mitigation is required.

Upper Encinal Tank Improvement

The Upper Encinal Improvement would replace an existing tank with a larger tank that would require a larger pad, which will require grading into existing soil in an area known for expansive soils. Appropriate geotechnical practices would be incorporated into the design and construction. However, the effect of a poorly engineered foundations and connecting pipelines in expansive soil could result in damage to the site from tank or pipelines failures, which would be a significant impact. **MM-GEO-1** includes evaluation of site-specific soils during design to ensure expansive soils would be avoided or mitigated. Therefore, impacts of the new tanks and connecting pipelines related to construction in potentially expansive soils would be reduced to less-than-significant levels with implementation of mitigation.

Operation

District 29 Creek Crossing Repairs

Crossing repairs would be for pipelines that are attached to bridges, not located in the soil. Therefore, the operation and maintenance of crossing repairs would have no impact related to expansive soils.

Replacement Pipeline Improvements

This discussion addresses all pipeline replacement improvements, as follows: the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements, and Big Rock Bypass Improvements.

All the pipeline improvements would be susceptible to some soil stability risks. Because all the replacement pipeline improvements would replace existing facilities with state-of-the-art pipelines in the same location, these replacements would not exacerbate risks, and the improvements would similar to, or better than, the existing pipelines. To the extent that the replaced pipelines would reduce the potential for pipeline leaks or failure to saturate susceptible soils, risks of soil instability would be slightly improved. The conditions at the replaced pipelines would be similar to, or better than, the existing conditions. Maintenance would not typically require soils disturbance. Therefore, operation and maintenance of the replaced pipelines would result in less-than-significant impacts related to expansive soils.

New Pipeline Improvements

The Emergency Source of Water Connection Improvement would be a new pipeline, constructed in an area known for expansive soils. The proposed improvements, with the appropriate geotechnical practices and the implementation of **MM-GEO-1** (discussed above under Construction) would not be

likely to be damaged by the expansive soils, if present. As discussed above, the proposed pipeline is in an undeveloped area with sparse downslope development. Implementation of GEO-1 would reduce impacts to people or property risks from expansive soils to less than significant.

Fernwood Tank Improvement

The Fernwood Tank Improvement is not located in an area with expansive soils. Therefore, the new tank would not be susceptible to the effects of expansive soils. Operation and maintenance of the Fernwood Tank Improvement would result in no impacts related to expansive soils.

Upper Encinal Tank Improvement

The Upper Encinal Tank Improvement would be constructed in an area known for expansive soils. It would replace an existing tank, but would require an enlarged footprint and grading of natural soils. The proposed improvement, with the appropriate geotechnical practices and the implementation of **MM-GEO-1**, discussed above under Construction, would not be likely to be damaged by the expansive soils, if present. As discussed above, the proposed pipeline is in an undeveloped area with sparse downslope development. Maintenance activities would typically not disturb soils. Implementation of the mitigation measure would reduce impacts to people or property risks from expansive soils to less than significant.

Impact GEO-VII.e.

Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No impact.

The proposed project does not include septic tanks or alternative wastewater disposal systems. There would be no impact related to disposal of wastewater.

Impact GEO-VII.f.

Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant with mitigation.

Construction

The following District 29 project improvements are located in or near sedimentary rock formations and soils that are known to have contained vertebrate fossil materials in the past:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements – Sespe Formation
- Coastline Drive 12-inch Waterline Improvements – Older Quaternary Alluvium
- Fernwood Tank Improvement – Upper Topanga Formation
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) – Monterey Formation
- PCH and Topanga Beach Drive Waterline improvements (Segment 1) – Tuna Canyon Formation

- PCH and Topanga Beach Drive Waterline improvements (Segment 2) – Sespe Formation
- PCH and Topanga Beach Drive Waterline improvements (Segment 3) – Monterey Formation
- Emergency Source of Water Supply Connection (Las Virgenes Connection) – Lower Topanga Formation
- Upper Encinal Tank Improvement – Lower Topanga Formation

Construction of these improvements has the potential to disturb paleontological resources in the sedimentary rock formations under the improvements. Because most of these sites have been previously disturbed with groundbreaking construction activities at the same locations (e.g., pipeline installation and/or roadway construction), it is unlikely, but still possible, that resources would be encountered. At the Upper Encinal Tank Improvement site, construction of a larger pad for the tank would require grading into soils that may not have been previously disturbed and may contain paleontological resources. This would be a significant impact. Implementation of **MM-GEO-2** and **MM-GEO-3** would provide evaluation, monitoring, recovery, and documentation of any paleontological resources encountered. Implementation of these measures would reduce impacts to paleontological resources to less than significant.

The District 29 Creek Crossing Repairs would have no impacts on paleontological resources because soils would not be disturbed, thus no mitigation is required.

Operation

Operation of the District 29 improvements would not disturb any undisturbed soils. Therefore, operation and maintenance would have less-than-significant impacts.

3.7.3.3 Mitigation Measures

Mitigation Measure GEO-1: Site-Specific Expansive Soil Testing and Design

This mitigation measure is applicable only to the Emergency Source of Water Supply Connection (Las Virgenes Connection) and the Upper Encinal Tank Improvement.

During facility design for the Emergency Source of Water Supply Connection (Las Virgenes Connection) and the Upper Encinal Tank Improvement, an engineering geologist will conduct an evaluation of soils to determine if there are highly expansive soils at the site (i.e., with an expansion index greater than 20). If expansive soils are present, the engineering geologist must recommend remediation measures to address the soil condition or engineer the pipeline and tank to withstand the pressure of highly expansive soils.

Mitigation Measure GEO-2: Paleontological Monitoring

This mitigation measure is applicable to the following seven improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, Fernwood Tank Improvement, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements (all three segments), Emergency Source of Water Supply Connection (Las Virgenes Connection), and Upper Encinal Tank Improvement.

Prior to construction of the improvements listed above, a qualified paleontologist(s) or cross-trained archaeologist(s) will assess the site with the construction contractor to identify the

portions of the site, if any, that, based upon the potential to disturb sedimentary rock formations, will require paleontological monitoring. In these areas, paleontological monitoring will occur by a qualified paleontologist or cross-trained archaeologist. The monitor(s) will have the authority to stop work or divert heavy equipment away from the fossil site until they have had an opportunity to examine and salvage the remains. The monitor(s) will be required to immediately notify the County of the work stoppage or diversion. The monitor(s) must be equipped with tools and collection materials to rapidly remove fossil remains and/or matrix (i.e., earth), and thus reduce the potential for any construction delays. If necessary, the monitor(s) will be authorized to bring in further resources or equipment for large discoveries.

Mitigation Measure GEO-3: Paleontological Documentation and Recovery

This mitigation measure is applicable to the following seven improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, Fernwood Tank Improvement, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), PCH and Topanga Beach Drive Waterline Improvements (all three segments), Emergency Source of Water Supply Connection (Las Virgenes Connection), and Upper Encinal Tank Improvement, if any fossils are recovered during implementation of Mitigation Measures GEO-2.

Fossils identified during construction must be documented by a qualified paleontologist(s) or cross-trained archaeologist(s) in a detailed Paleontological Mitigation Report. Fossils recovered from the field or by processing must be prepared, identified, and, along with accompanying field notes, maps and photographs, accessioned into the collections of a designated, accredited museum, such as the Natural History Museum of Los Angeles County.

3.7.3.4 Level of Impact after Mitigation

With implementation of **MM-GEO-1**, impacts related to expansive soils would be reduced to less-than-significant levels.

With implementation of **MM-GEO-2** and **MM-GEO-3**, impacts to paleontological resources would be reduced to less-than-significant.

3.8 Greenhouse Gas Emissions

This section describes the existing conditions for greenhouse gas (GHG) emissions, the regulatory framework associated with GHGs, and the impacts related to GHGs that would result from the proposed project.

3.8.1 Environmental Setting

3.8.1.1 Greenhouse Effect and Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight passing through the atmosphere. Some of the sunlight striking Earth is absorbed and converted to heat, which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted toward the surface by GHGs. Human activities that generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth.

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures, a phenomenon commonly referred to as *global warming*. Higher global surface temperatures, in turn, result in changes to Earth's climate system, including increased ocean temperature and acidity, reduced sea ice, variable precipitation, and increased frequency and intensity of extreme weather events (Intergovernmental Panel on Climate Change 2007). Large-scale changes to Earth's system are collectively referred to as *climate change.*

The World Meteorological Organization and United Nations Environment Programme established the Intergovernmental Panel on Climate Change (IPCC) to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that the average global temperature will rise by 0.3–4.8°C (0.5–8.6°F) during the twenty-first century (Intergovernmental Panel on Climate Change 2013). Large increases in global temperatures could have substantial adverse effects on the natural and human environments in California and worldwide.

3.8.1.2 Pollutants of Concern

The principle anthropogenic (i.e., human-made) GHGs contributing to global warming are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O, and fluorinated compounds, including sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources.

The primary GHGs of concern associated with the project are CO_2, CH_4, and N_2O. Principal characteristics of these pollutants are discussed below.

- **Carbon dioxide** enters the atmosphere through fossil fuels (i.e., oil, natural gas, and coal) combustion, solid waste decomposition, plant and animal respiration, and chemical reactions

(e.g., manufacture of cement). CO_2 is also removed from the atmosphere (i.e., sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide** is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined in IPCC reference documents. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO_2e), which compares the gas in question to that of the same mass of CO_2, which, by definition, has a global warming potential of 1.

Table 3.8-1 lists the global warming potential of CO_2, CH_4, and N_2O; their lifetimes; and their abundances in the atmosphere.

Table 3.8-1. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)	Current Atmospheric Abundance
CO_2	1	50–200	400 ppm
CH_4	25	9–15	1,834 ppb
N_2O	298	121	328 ppb

Notes:
Ppb = parts per billion
Ppm = parts per million
Sources: California Air Resources Board 2018; Blasing 2016.

3.8.1.3 Greenhouse Gas Emission Inventories

A GHG inventory is a quantification of all GHG emissions and sinks[1] within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources. Table 3.8-2 outlines the most recent global, national, and statewide GHG inventories to help contextualize the magnitude of project-related emissions.

[1] A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

Table 3.8-1. Global, National, and State, Greenhouse Gas Emissions (metric tons per year)

Emissions Inventory	CO_2e (rounded)
2010 IPCC Global	52,000,000,000
2016 EPA[1] National	6,511,000,000
2016 CARB[2] State	429,400,000

Notes:
[1] EPA = U.S. Environmental Protection Agency
[2] CARB = California Air Resources Board
Sources: Intergovernmental Panel on Climate Change 2014; U.S. Environmental Protection Agency 2018; California Air Resources Board 2018.

3.8.1.4 Potential Climate Change Effects

Climate change is a complex phenomenon that has the potential to alter local climatic patterns and meteorology. Although modeling indicates that climate change will result in sea level rise both globally and regionally, as well as changes in climate and rainfall, among other effects, there remains uncertainty about characterizing precise local climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level. Regardless of this uncertainty, it is widely understood that substantial climate change is expected to occur in the future, although the precise extent will take further research to define.

Specifically, significant impacts from global climate change worldwide and in California include:

- Declining sea ice and mountain snowpack levels, which thereby increase sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor, due to the atmosphere's ability to hold more water vapor at higher temperatures (U.S. Environmental Protection Agency 2009).
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets (Intergovernmental Panel on Climate Change 2013).
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (Intergovernmental Panel on Climate Change 2013).
- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent, to as much as 90 percent, over the next 100 years (California Environmental Protection Agency 2010).
- Increasing the number of days conducive to ozone formation (i.e., clear days with intense sun light) by 25 percent to 85 percent, depending on the future temperature scenario, by the end of the twenty-first century in high ozone areas, including Southern California (California Environmental Protection Agency 2010).
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level (California Environmental Protection Agency 2010). and
- Exacerbating the severity of drought conditions in California such that durations and intensities are amplified, ultimately increasing the risk of wildfires and consequential damage incurred (California State Senate 2015).

3.8.2 Regulatory Setting

3.8.2.1 Federal

There is currently no federal overarching law specifically related to climate change or the reduction of GHG emissions. Under the Obama administration, the federal EPA had been developing regulations under the Clean Air Act (CAA), pursuant to EPA's authority under the act.[2] There have also been settlement agreements between EPA, several states, and nongovernmental organizations (NGOs) to address GHG emissions from electric generating units and refineries, as well as the EPA's issuance of an Endangerment Finding and a Cause or Contribute Finding. EPA has also adopted a Mandatory Reporting Rule and Clean Power Plan. Under the Clean Power Plan, EPA issued regulations to control CO_2 emissions from new and existing coal-fired power plants. However, on February 9, 2016, the Supreme Court issued a stay of these regulations pending litigation. Former EPA Administrator Scott Pruitt also signed a measure to repeal the Clean Power Plan. The fate of the proposed regulations is uncertain given the change in federal administrations and the pending deliberations in federal courts.

3.8.2.2 State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor has also issued several executive orders (EO) related to the state's evolving climate change policy. Of particular importance are Assembly Bill (AB) 32 and Senate Bill (SB) 32, which outline the state's GHG reduction goals of achieving 1990 emissions levels by 2020 and a 40-percent reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is regulated generally at the state level and is approached typically by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, legal cases, regulations, and legislation at the state levels that are relevant to the project are identified below.

AB 1493: Pavley Rules (2002, Amendments 2009, 2012 Rulemaking)

Known as *Pavley I*, AB 1493 standards are the nation's first GHG standards for automobiles. AB 1493 requires the California Air Resources Board (CARB) to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II*, now referred to as the *Advanced Clean Cars* measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon by 2025.

EO S-3-05 (2005)

EO S-3-05 asserted that California is vulnerable to the effects of climate change. To combat this concern, the order established the following GHG emissions reduction targets.

[2] In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld EPA's authority to regulate GHG emissions under the CCA.

- 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.

Executive orders are legally binding only on state agencies. Accordingly, EO S-3-05 guides state agencies' efforts to control and regulate GHG emissions, but has no direct, binding effect on local government or private actions. The secretary of the California EPA is required to report to the governor and state legislature biannually regarding the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this EO.

AB 32: California Global Warming Solutions Act (2006)

AB 32 codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since AB 32 was adopted, CARB, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32. The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires CARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the AB 32 Scoping Plan articulates a key role for local governments, recommending that they establish GHG reduction goals consistent with those of the state for both their municipal operations and the community.

EO S-01-07: Low Carbon Fuel Standard (2007)

EO S-01-07 essentially mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) that a Low-Carbon Fuel Standard (LCFS) for transportation fuels be established in California. CARB approved the LCFS on April 23, 2009, and the regulation became effective on January 12, 2010. The U.S. District Court for the Eastern District of California ruled in December 2011 that the LCFS violates the Commerce Clause of the U.S. Constitution. CARB appealed this ruling in 2012, and on September 18, 2013, the Ninth U.S. Circuit Court of Appeals upheld the LCFS, ruling that the program does not violate the Commerce Clause and remanding the case to the Eastern District.

SBs 1078, 107, and 2: Renewables Portfolio Standard (2011)

SB 1078 (2002), SB 107 (2006), and SB 2 (2011), California's Renewables Portfolio Standard (RPS), obligates investor-owned utilities (IOU), energy service providers (ESP), and community choice aggregators (CCA) to procure additional retail sales per year from eligible renewable sources with the long-range target of procuring 33 percent of retail sales from renewable resources by 2020. The CPUC and CEC are jointly responsible for implementing the program.

SB 350: Clean Energy and Pollution Reduction Act of 2015

SB 350 (2015) requires the following by 2030: (1) an RPS of 50 percent, and (2) a doubling of energy efficiency (i.e., electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of CPUC and CEC.

SB 32: California Global Warming Solutions Act of 2006

SB 32 (2016) requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in EO B-30-15. CARB adopted the 2017 Climate Change Scoping Plan in November 2017 to meet the GHG reduction requirement set forth in SB 32. It proposes continuing the major programs of the previous Scoping Plan, including cap-and-trade regulation; LFCS; more efficient cars, trucks, and freight movement; RPS; and reducing methane emissions from agricultural and other wastes. The Scoping Plan Update also addresses for the first time the GHG emissions from natural and working lands in California.

AB 197

The companion bill to SB 32, AB 197 creates standards that require forming a Joint Legislative Committee on Climate Change Policies (JLCCCP), require CARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, require CARB to prepare reports on sources of GHGs and other pollutants, establish 6-year terms for voting members of CARB, and add two legislators as non-voting members of CARB.

3.8.2.3 Regional and Local

As discussed in Section 3.3, *Air Quality*, the South Coast Air Quality Management District (SCAQMD) is responsible for air quality planning within the South Coast Air Basin (Basin). The SCAQMD formed a working group to identify GHG emission thresholds for land use projects that local lead agencies use. The working group developed several different options that are contained in the *Draft Guidance Document—Interim CEQA Greenhouse Gas Significance Threshold*. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that lead agencies can consider in adopting their own threshold.

In October 2015, the County of Los Angeles adopted the Community Climate Action Plan (CCAP), which describes the County's plan for achieving the goal of reducing GHG emissions from community activities in the unincorporated areas of Los Angeles County by at least 11 percent below 2010 levels by 2020. The CCAP includes specific strategy areas for each of the major emissions sectors and provides details on the 2010 and projected 2020 emissions in the unincorporated areas. The CCAP is a component of the Los Angeles County General Plan. The City of Malibu does not currently have a qualifying climate action plan.

Los Angeles County recently adopted the *OurCounty Los Angeles County Sustainability Plan*, outlining what local governments and stakeholders can do to enhance the well-being of the communities in Los Angeles County, focusing on those that have been disproportionately burdened by environmental pollution (Los Angeles County 2019). There are no policies in the plan applicable to the project.

3.8.3 Impacts and Mitigation

3.8.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in either of the following conditions:

- Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, and
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.8.3.2 Methods

There are no established federal, state, or local quantitative thresholds applicable to the proposed project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, SCAQMD, and various other cities and agencies have proposed, or adopted, thresholds of significance that require the implementation of GHG emission reduction measures.

The County of Los Angeles has neither drafted nor adopted threshold approaches and guidelines for analyzing GHG emissions and climate change in CEQA documents. Although the County adopted its CCAP in 2015, the plan was prepared to comply with the 2020 GHG reduction goal established by AB 32 and therefore would not be applicable to use in evaluating GHG emissions of the proposed project beyond the 2020 timeframe. Therefore, the GHG emissions analysis for the proposed project herein cannot rely on a qualitative tiering analysis with the County's CCAP. Although SCAQMD has adopted a 10,000-metric-ton (MT) per year significance threshold level for industrial projects for which SCAQMD is the CEQA lead agency, this threshold would not be applicable to the proposed project because the project is a water infrastructure project that does not fit into the industrial project category. SCAQMD has not adopted a threshold level for public works projects, but has drafted separate numerical thresholds for residential projects (3,500 metric tons of carbon dioxide equivalent [$MTCO_2e$]/year), commercial projects (1,400 $MTCO_2e$/year), and mixed-use and all non-industrial projects (3,000 $MTCO_2e$/year). Given that the proposed project is neither industrial nor residential, applying a screening rate that applies to 90 percent of projects is the most appropriate screening threshold for determining GHG emissions is the SCAQMD-proposed Tier 3 screening threshold (SCAQMD 2008); therefore, a significant impact would occur if the proposed project would exceed the SCAQMD proposed threshold of 3,000 $MTCO_2e$ per year. As the Tier 3 screening threshold proposed by SCAQMD is tied to meeting the reduction goals outlined by AB 32, this numeric threshold is also used as the basis for evaluating the proposed project. Based on SCAQMD guidance, construction emissions are amortized over the life of the project, which SCAQMD defines as 30 years, and compared to the applicable interim GHG significance threshold tier.

As discussed for air pollutant emissions in Section 3.3, *Air Quality*, GHG emissions were estimated using emissions factors for off-road construction equipment and on-road vehicle trips using the Road Construction Emissions Model (version 9.0.0) and project-specific parameters on construction schedule information, construction equipment that would be used, excavation and paving quantities, and truck trips provided by Los Angeles County Department of Public Works (LACDPW) engineering staff. Because there would be no change from existing conditions in operational characteristics of the pipelines and tanks once construction activities are complete, no change in operational GHG emissions would occur, and thus operational emissions are not discussed below.

3.8.3.3 Impacts

Impact GHG-VIII.a.

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant.

Construction activities would result in GHG emissions from fuel combustion associated with on- and off-road construction equipment and vehicles. Emissions associated with construction are summarized in Table 3.8-3. Construction emissions are summed and amortized over the expected 30-year service life of the project. As shown in Table 3.8-3, the full project construction would result in amortized annual emissions of approximately 162 metric tons, which would not exceed the SCAQMD threshold of 3,000 metric tons. As such, impacts would be less than significant.

Table 3.8-3. Estimate of Total Construction GHG Emissions (metric tons)

Project Element	$MTCO_2e$
PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	818
District 29 Creek Crossing Repair	486
Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	653
Coastline Drive 12-Inch Waterline Improvement	652
Fernwood Tank Improvement	171
PCH and Topanga Beach Drive Waterline Improvements	404
Emergency Source of Water Supply Connection (Las Virgenes Connection)	965
Big Rock Bypass Improvements	723
Total Construction Emissions	4,871
30-year Amortized Total	162

Source: Appendix B.
$MTCO_2e$ = metric tons of carbon dioxide equivalent.

Impact GHG-VIII.b.

Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant.

AB 32 and SB 32

AB 32 codifies the state's GHG emissions reduction targets for 2020. CARB adopted the 2008 Scoping Plan and 2014 First Update as a framework for achieving AB 32. The 2008 Scoping Plan and 2014 First Update outline a series of technologically feasible and cost-effective measures for reducing statewide GHG emissions. CARB adopted the 2017 Climate Change Scoping Plan in November 2017 as a framework to achieve the 2030 GHG reduction goal described in SB 32.

The 2008 and 2014 Scoping Plans indicate that some reductions would need to occur in the form of changes pertaining to vehicle emissions and mileage standards. Some reductions would result from changes pertaining to sources of electricity and increased energy efficiency at existing facilities; the remainder would need to come from state and local plans, policies, or regulations that would lower carbon emissions relative to business-as-usual conditions. The 2017 Scoping Plan carries forward GHG reduction measures from the 2014 First Update, as well as new potential measures that help achieve the state's 2030 target across all sectors of the California economy, including transportation, energy, and industry. Local governments will also continue to play a vital role in reducing GHG emissions at the local level. Currently, 60 percent of cities and more than 70 percent of countries have

completed a GHG inventory, and 42 percent of local governments have completed a climate, energy, or sustainability plan that addresses GHG emissions (CARB 2017).

The purpose of the project is to improve water system reliability in the project's area by replacing existing pipelines and tanks, and, as such, the GHG reduction measures in the 2017 Scoping Plan are largely inapplicable to the project. The project would be affected by the scoping plan measures, however, because it involves the use of construction equipment required to complete construction activities. On- and off-road construction equipment used for implementation of the project would be affected by the low carbon fuel standard and clean vehicle standards for heavy-duty vehicle measures in the 2017 Scoping Plan. These measures would lead to more fuel-efficient vehicles and equipment for the construction activities, and thus lower GHG emissions.

Because the project is largely not applicable to the scoping plan measures, it would not conflict with policies described in the scoping plans for AB 32 and SB 32. This impact is less than significant, and no mitigation is required.

Regional and Local Plans

As discussed above, the County's CCAP applies to unincorporated areas of Los Angeles County, and nearly the entirety of the proposed project improvements would occur within the boundaries of the City of Malibu. As such, the CCAP does not apply. The City of Malibu does not currently have a climate action plan.

3.8.3.4 Mitigation Measures

No mitigation measures are required.

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3.9 Hazards and Hazardous Materials

This section evaluates public health hazards, hazardous materials sites, use and management of hazardous materials, airport-related hazards and wildland fire hazards. Geologic hazards are evaluated in Section 3.8, *Geology and Soils.*

Hazardous materials are defined as materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code § 25501(o)). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they can be disposed of properly (22 CCR § 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific 22 CCR criteria.

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials Sites

The presence of hazardous materials in soils or groundwater encountered during site excavation can potentially create a hazard for the public, construction workers, or the environment, and create a waste that requires special handling, transport and disposal.

Available regulatory databases were searched to identify sites with potentially hazardous waste, hazardous materials or contamination in the vicinity of the project sites. The database search included the state databases known as the Cortese List, which includes the Department of Toxic Substances Control (DTSC) EnviroStor database, the State Water Resources Control Board (SWRCB) GeoTracker database, list of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels, the list of "active" Cease and Desist Orders and Cleanup and Abatement Orders from the SWRCB, and the DTSC list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. The GeoTracker database contained listed sites that were located within a quarter mile of the improvement sites (See Table 3.9-1). None of the other databases searched contained any listings within proximity of the improvement sites.

Table 3.9-1. Cortese List Database Listings within a Quarter Mile of the Improvements Sites

Listing	Description	Distance to Improvement Sites
Paradise Cove Land Company 28128 PCH Malibu, CA	LUST Cleanup Site Status: Completed – Case Closed RB Case #I-09823	Adjacent to PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road). Geotracker identifies the site as approximately 50 feet south; however, the address listed is located approximately 0.24 mile south.

Listing	Description	Distance to Improvement Sites
Frontier California: Malibu Co 22211 PCH Malibu, CA	Permitted UST	Adjacently (approximately 35 feet) north of PCH and Topanga Beach Drive Waterline Improvement: Segment 3.
LA Co Fire Station #70 3970 Carbon Canyon Road Malibu, CA	LUST Cleanup Site Status: Completed – Case Closed RB Case #R-12762	100 feet east of the eastern end of PCH and Topanga Beach Drive Waterline Improvements: Segment 3 and adjacently east of Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
Tosco #30414; MMK Enterprises LLC; Unocal #1890 21216 PCH Malibu, CA	LUST Cleanup Site Status: Completed – Case Closed RB Cases #I-06455A, #I-06455B, and #I-06455	Adjacently (LOD for the proposed project overlaps with the LUST site) south of eastern end of PCH and Topanga Beach Drive Waterline Improvement: Segment 2.
J Paul Getty Trust (The Getty Villa Museum) 17985 W. PCH Malibu, CA	Permitted UST	Adjacently northeast of eastern end of Coastline Drive 12-inch Waterline Improvements. Geotracker identifies the site as approximately 150 feet southeast, however the address listed is located approximately 900 feet.

Source: SWRCB 2019
LUST = Leaking Underground Storage Tank
UST = Underground Storage Tank
RB = Regional Board

3.9.1.2 Emergency Response Plans

LACDPW has prepared an emergency response plan for its existing District 29 facilities to provide adequate equipment and training to its personnel to prevent accidental releases and to detect, respond to, mitigate, and abate hazards that could occur in the event of an accidental release. Los Angeles County also has an All-Hazard Mitigation Plan and the Los Angeles County Operational Area Strategic Plan for Emergency Management. (See Section 3.9.2.3, *Local Regulations*, for additional information.)

3.9.1.3 Schools and Other Sensitive Receptors

Because children and the elderly are more susceptible than adults to the effects of many hazardous materials, preschools, schools, daycare centers, nursing homes, and hospitals are considered sensitive receptors related to review of hazardous materials issues. Table 3.9-2 shows one school located within a quarter mile of an improvement site. Table 3.9-3 provides the same information for construction staging sites.

Table 3.9-2. Schools within a Quarter Mile of Improvement Sites

School	Nearest Improvement Site	Distance to Improvement Site (Approximate)
St Aidan's School (preschool–Grade 12) 28211 PCH, Malibu	PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	130 feet

Source: GoogleEarth 2019

Table 3.9-3. Schools within a Quarter Mile of a Staging Area Site

School	Nearest Staging Area	Distance to Staging Area Site (Approximate)
Webster Elementary School 3602 Winter Canyon Road, Malibu	RMD Winter Canyon Yard	100 feet
Pepperdine University 24255 PCH, Malibu	RMD Winter Canyon Yard	0.23 mile
C.O.O.L. School Malibu Preschool 6418 Cavalleri Road, Malibu	Point Dume Tank Site	0.22 miles

Source: SMMUSD 2019; GoogleEarth 2019

3.9.1.4 Airports

Under CEQA, projects that would be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport or within the vicinity of a private airstrip, could potentially result in a safety hazard for people residing or working in the project area.

Within the District 29 service area, there is no public airport or public use airport within 2 miles of any proposed improvement site. The nearest public airports are outside the District 29 area, located in the San Fernando Valley, Santa Monica, Los Angeles and Ventura County. There are no private airstrips within the District 29 area. There are, however, four private heliports, none of which are in the vicinity of proposed improvement sites:

- **Anacapa View Estates Heliport**, 31334 Anacapa View Drive, Malibu, CA 90265 (approximately 1.3 miles east of Emergency Source of Water Supply Connection (Las Virgenes Connection)
- **Los Angeles County Fire Department Camp 8 Heliport**, 1900 South Rambla Pacifico, Malibu, CA 90265 (1.7 miles north of PCH and Topanga Beach Drive Waterline Improvements [Segments 2 and 3], Las Flores Canyon Creek Crossing Repair, and Coal [Carbon] Canyon Creek Crossing Repair)
- **Hughes Malibu Aircraft Heliport**, Malibu, CA 90265 (1.8 miles west of PCH and Topanga Beach Drive Waterline Improvements [Segment 3])
- **Malibu Administrative Center Heliport**, Malibu Civic Center, Malibu, CA 90265 (1.3 miles west of PCH and Topanga Beach Drive Waterline Improvements [Segment 3])

3.9.2 Regulatory Setting

3.9.2.1 Federal

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/ Hazardous and Solid Waste Act

The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a U.S. Environmental Protection Agency (EPA)-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the cradle-to-grave system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/ Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP. The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986. There are no existing Superfund sites within 5 miles of the proposed project.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA) mission is to ensure the safety and health of American workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910. OSHA standards are applicable to the District 29 construction sites and staging areas.

Toxic Substances Control Act

The Toxic Substances Control Act came into law on October 11, 1976. The Toxic Substances Control Act authorized EPA to secure information on all new and existing chemical substances, as well as control any of the substances that were determined to cause unreasonable risk to public health or the environment. This Act provides information and controls on toxic substances that may be used in construction or operation of the project improvements.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation Hazardous Materials regulations cover all aspects of hazardous materials packaging, handling, and transportation. Some of the topics covered include Parts 107

(Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 176 (Vessel Transportation), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance). These regulations provide controls over handling and transportation of hazardous materials that may be used in construction or operation of the project improvements.

3.9.2.2 State

Department of Toxic Substances Control

The Department of Toxic Substance Control (DTSC), a department of the California EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5–10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material. There are Cortese List sites in the vicinity of some improvement sites (see Table 3.9-1).

Hazardous Waste Control Act (Section 25100 et seq.)

DTSC is responsible for enforcing the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. The District 29 project is subject to the standards and requirements established by the DTSC.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health and Safety Code, Chapter 6.11, §§ 25404–25404.9) provides authority to the Certified Unified Program Agency (CUPA). The Los Angeles County Fire Department (LACoFD) is the CUPA for Los Angeles County and responsible for administering, issuing permits for, and carrying out enforcement and inspection for the six regulatory programs that are part of the unified program. The LACDPW is a Unified Program Agency and is a Participating Agency to the CUPA.

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of hazardous materials programs, including the HazMat Business Plan Program, California Accidental Release Prevention Program, UST Program, AST Program, Hazardous Waste Generator Program, and Incident Response. The District 29 project is subject to the standards and requirements established by this program.

California Code of Regulations, Title 8 – Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal OSHA) and the federal OSHA are the agencies responsible for assuring worker safety in the workplace. Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. These standards would apply to construction activities. Cal OSHA standards are applicable to the District 29 construction sites and staging areas.

California Labor Code (Division 5, Parts 1, 6, 7, and 7.5)

The California Labor Code includes regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who are in charge of handling hazardous materials are appropriately trained and informed with respect to the materials they handle. Division 5, Part 7, ensures that employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing. California Labor Code regulations are applicable to the District 29 construction sites and staging areas.

3.9.2.3 Local Regulations

Los Angeles County Fire Department Health Hazardous Materials Division

LACoFD is the CUPA for Los Angeles County and responsible for administering, issuing permits for, and carrying out enforcement and inspection for the six regulatory programs that are part of the unified program. The LACDPW is a Unified Program Agency and is a Participating Agency to the CUPA. The CUPA covers the unincorporated portions of the county and Malibu (along with other cities in the county). The project is subject to the program.

3.9.3 Impacts and Mitigation

3.9.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a project or an alternative would be considered to have a significant effect if it would result in any of the conditions listed below:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school.
- Be located on a site that 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.
- Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area.

3.9.3.2 Impacts

Impact HAZ-IX.a

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 of the eight improvements that make up the proposed project would include the use of heavy construction equipment, such as excavators, graders, backhoes, generators, compressors, paving trucks, and welding equipment. The use and maintenance of the construction equipment would require the use and transport of hazardous materials, such as solvents, fuels, and lubricants. Hazardous materials may be stored at one of the staging areas for use at the project sites. LACDPW has prepared a Construction Site BMP Manual to assist contractors in the process of selection and implementation of construction site BMPs (LACDPW 2010). Table 3.9-4 lists the BMPs expected to be used to manage material and waste handling and disposal at the construction site, which are required for all contractors working for LACDPW. Because the BMPs are required on all LACDPW construction contracts, they are considered part of the project (rather than mitigation). Specifically, BMPs WM-1, WM-2, WM-4, and WM-6 consist of practices and procedures designed to ensure the safe delivery, storage, and use of hazardous materials, and the correct procedures to follow in order to prevent, control, and/or cleanup spilled hazardous materials. The implementation of these BMPs, as well as compliance with the regulatory framework, especially RCRA, OSHA, the Toxic Substance Control Act, 49 CFR 100–185, and the requirements of the local CUPA, would ensure the proposed project would not result in significant hazards due to the use of hazardous materials during construction or routine operation activities. Impacts would be less than significant.

Operation

The operations of the improvement would generally not require the routine use of hazardous materials after construction is complete. The waterline improvements 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 tank would also not require the use of hazardous materials, except for the occasional use during routine maintenance or repairs, such as oils, solvents, and paints that will be stored and secured at LACDPW maintenance yards. These hazardous material products are generally used in small, localized amounts, and any spills that may occur are cleaned up as soon as they occur. Hazardous materials would not be stored on the project sites or staging areas during operation. All operation activities would occur in compliance with the existing regulatory framework. Therefore, construction and operation of the proposed 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.

Table 3.9-4. District 29 Project Construction BMPs (Waste Management and Material Pollution Control BMPs)

BMP Manual BMP Number and Title	Summary	Application
WM-1 Materials Delivery and Storage	This BMP includes practices for proper handling and storage of materials, delivery practices, and spill clean-up procedures. This BMP applies to all construction sites with delivery and storage of, but not limited to, hazardous chemicals such as acids, limes, glues, adhesives, paints/ solvents, and curing compounds; soil stabilizers and binders; fertilizers; detergents; plaster; petroleum products, asphalt and concrete components; pesticides and herbicides; other materials that may be detrimental if released to the environment.	All improvements and staging areas.
WM-2 Material Use	These are procedures and practices for use of construction materials including, but not limited to, the materials listed in WM-1.	All improvements.
WM-3 Stockpile Management	Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as Portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder ("cold mix"), green waste and other materials and wastes. This would be implemented in all projects that stockpile soil and other materials and wastes.	All improvements and staging areas.
WM-4 Spill Prevention and Control	This BMP is implemented to prevent, control, and clean-up spills in a manner that minimizes or prevents discharge of spilled materials to the permeable or impermeable ground surface, drainage system, or watercourses. This BMP is implemented at all construction project sites and shall be implemented anytime liquids, dry materials, or wastes (including chemicals, hazardous or non-hazardous substances) are stored or used onsite.	All improvements and staging areas.
WM-5 Solid Waste Management	This BMP outlines collection, storage, and disposal procedures designed to minimize or eliminate the discharge of pollutants offsite, to the ground, drainage systems or watercourses, through material and waste management. This BMP applies to all construction sites that generate solid waste, which includes, but is not limited to, construction waste, planting wastes, and litter and debris.	All improvements and staging areas.

BMP Manual BMP Number and Title	Summary	Application
WM-6 Hazardous Waste Management	These procedures and practices to minimize or eliminate the discharge of pollutants from contractor generated waste or waste illegally dumped onsite by others that is hazardous waste, or waste that is otherwise not allowed to be disposed as solid waste, to the ground, storm drain systems or to watercourses. This BMP applies to all construction sites, and all hazardous waste, non-hazardous waste, designated waste, and any other waste that requires special disposal practices. Includes solid, liquid, or gaseous wastes.	All improvements and staging areas.
WM-7 Contaminated Soil Management	Specific procedures and practices presented in this BMP would be implemented based on specific contaminants known to exist onsite. This BMP is implemented on construction projects in highly urbanized or industrial areas where soil contamination may have occurred due to spills, illicit discharges, and leaks from underground oil pipelines and storage tanks.	PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road); PCH and Topanga Beach Drive Waterline Improvements: Segment 2; PCH and Topanga Beach Drive Waterline Improvements: Segment 3
WM-8 Concrete Waste Management	This BMP is implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities; where slurries containing Portland cement concrete or asphalt concrete are generated; where concrete trucks and equipment are washing onsite; and where grout and mortar-mixing stations are used.	All improvements where concrete is used or concrete demolition is required.
WM-9 Sanitary/Septic Waste Management	This BMP is to minimize or eliminate the discharge of construction site sanitary/septic waste materials to storm drain system or to watercourses. This BMP includes storage and disposal procedures, and is implemented on all construction sites that use temporary or portable sanitary/septic waste systems.	All improvements and staging areas if temporary or portable sanitary/septic waste systems are used.
WM-10 Liquid Waste Management	This BMP reduces or prevents discharge of pollutants to the ground, storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid wastes. This BMP applies to construction sites that generate any non-hazardous byproducts, residuals, or wastes not limited to the following; drilling slurries and drilling fluids, grease-free and oil-free waste water and rinse water, dredgings, and other non-storm water liquid discharges not permitted by separate permits.	All improvements and staging areas.

Source: LACDPW 2010

Impact HAZ-IX.b.

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 with mitigation.

Construction

As mentioned in the discussion of Impact HAZ-IX.b, construction of the proposed project would involve the use of hazardous materials, such as fuels, oils, solvents, and welding equipment. In addition, ground-disturbing activities could result in accidental exposure of hazardous materials if contaminated soil, groundwater, or sediments are present within the project site, which could present a hazard to the public or the environment. All the proposed improvements except the District 29 Creek Crossing Repairs would require ground-disturbing activities. No historic or current hazardous materials sites were identified by the Cortese List databases on the project sites; however, three former LUST Cleanup Sites are located adjacent to proposed improvement sites that require ground disturbance. All three of the LUST Cleanup Sites have been determined to be completed by the Los Angeles Regional Water Quality Control Board (RWQCB) and the cases have been closed. The site identified as MMK Enterprises LLC (also listed as Tosco #30414) underwent investigation for potential soil and groundwater contamination. The case was closed after soil and groundwater samples were collected and petroleum hydrocarbon concentrations were found below the generally accepted regulatory action levels. The GeoTracker database did not have additional information regarding the nature of the other two LUST listings (Paradise Cove Land Company and LA Co Fire Station #70). Two listings for Permitted USTs were identified within a quarter mile of the project sites, Frontier California: Malibu Co, and J Paul Getty Trust. No record of unauthorized releases or other violations were listed on the GeoTracker database for these sites. Based on the available information, it is unlikely that ground-disturbing construction activities in the vicinity of the listed sites Frontier California: Malibu Co, J Paul Getty Trust, or MMK Enterprises LLC, would encounter contaminated soil or groundwater. Because information is not available for the LUST cases identified as Paradise Cove Land Company and LA Co Fire Station #70, the extent of potential contamination is unknown. Therefore, ground-disturbing construction activities in the vicinity of the sites may encounter contaminated soil or groundwater, which could expose hazardous materials to the public or the environment, resulting in a potentially significant impact.

To reduce the potential impact of ground disturbance in or near a potentially contaminated area, Mitigation Measure HAZ-1 should be implemented prior to commencement of the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road), the PCH and Topanga Beach Drive Waterline Improvements, Segment 3, and the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, and any other improvement with the potential to encounter soil or groundwater contamination. **Mitigation Measures (MM**) **HAZ-2** through **HAZ-4** will be implemented if contaminated materials are encountered or discovered during construction.

The implementation of **MM-HAZ-1** through **MM-HAZ-4** would require the evaluation of improvement sites with potential contamination, and would ensure any contamination encountered would be treatment in compliance with applicable regulations and disposed of at approved disposal sites. The impact would be less than significant with mitigation incorporated.

Operational

Operations of the proposed project would require periodic maintenance, similar to existing conditions. Routine maintenance and inspections would be unlikely to require ground disturbance, but if so, it would be only in previously disturbed areas. Use of any hazardous materials during maintenance would be in small quantities and would be complaint with the existing regulatory framework. Impacts would be less than significant.

Impact HAZ-IX.c.

Would the project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school?

Less than significant with mitigation.

Construction

One existing school is located within a quarter mile of one of the project sites; St Aidan's School is located just north of the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road). Construction of the proposed project is not anticipated to release hazardous emissions; however, construction would utilize hazardous materials, such as fuels, solvents, and oils, and therefore has the potential for accidental release of hazardous materials through the transport and use. Construction equipment and materials would be used, stored, and disposed of in compliance with the LACDPW Construction BMP Manual; specifically, the BMPs identified in Table 3.9-4, which are applicable to the proposed project. Storage, transport, and use of hazardous materials would also be compliant with the applicable regulatory framework, outlined in Section 3.9.2, *Regulatory Setting*.

Additionally, ground-disturbing construction activities have the potential to expose existing contaminated soil or groundwater. A potential source of historic contamination, the Paradise Cove Land Company, is located adjacent to the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) site, and within a quarter mile of St Aidan's School. Information was not available on the existing conditions at the Paradise Cove Land Company site. It is possible ground-disturbing activities at the project site could encounter contaminated soils or groundwater, and could expose the school to contaminants of concern. However, all excavation and construction would occur within the road right-of-way and would not encroach on school property. In addition, **MM-HAZ-1** would be implemented prior to initiation of the proposed improvement construction to characterize the conditions onsite. If, during construction activities, contaminated soils or groundwater are encountered, **MM-HAZ-2** through **MM-HAZ-4** would be implemented, in order to ensure safe and appropriate handling and disposal of contaminated soils.

Three schools are located within a quarter mile of a proposed staging area. The proposed staging areas would be used for delivery and storage of construction materials, and temporary staging for equipment and worker vehicles during construction. The LACDPW Construction BMPs would also be implemented at the proposed staging areas to ensure the safe handling, storage, and disposal of hazardous materials and minimize or prevent the exposure of schools to hazardous materials.

Therefore, with the implementation of the applicable BMPs, compliance with the existing regulatory framework, and implementation of **MM-HAZ-2** through **MM-HAZ-4**, the potential impact related to handling of hazardous materials within a quarter mile of a school would be reduced to less than significant.

Operational

Operation of the proposed project would require periodic maintenance, similar to existing conditions. Routine maintenance and inspections would be unlikely to require ground disturbance but if it did it would be only in previously disturbed areas. Use of any hazardous materials during maintenance would be in small quantities and would be complaint with the existing regulatory framework. Operations would not be expected to result in exposure of hazardous materials within a quarter mile of a school.

Impact HAZ-IX.d.

Would the project be located on a site that 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 with mitigation.

A search of the online databases associated with Government Code Section 65962.5 (the Cortese List) has been completed for this analysis; the results can be found in Table 3.9-1. All of the improvements, except the Fernwood Tank Improvement are within road rights-of-way, and are not located on a site that is included in this list. The Fernwood Tank Improvement site is not located on the databases that comprise the Cortese List.

The SWQCB GeoTracker database identified five hazardous materials sites in the vicinity of the proposed improvements (Appendix D). These listings have been determined to be completed by the SWQCB and have been given a status of "closed." However, due to the nature of soil or groundwater contamination, it is possible unauthorized releases of hazardous substances could migrate beyond the boundaries of a listed site. Ground disturbing construction activities in the rights-of-way could encounter contamination that originated from an adjacent property. In order to avoid existing contamination, **MM-HAZ-1** would be implemented before construction commences for the PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) site, PCH to Topanga Beach Drive Waterline Improvements, Segment 3, and Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, which are in the vicinity of listed hazardous materials sites. In addition, if contaminated soil or groundwater is encountered while ground-disturbing construction activities are occurring, **MM-HAZ-2** through **MM-HAZ-4** would be implemented to ensure the proper characterization, handling, and disposal of any contaminated soil or groundwater encountered.

Impact HAZ-IX.e.

For a project located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?

No impact.

Construction and Operational

The proposed improvements are not located within an airport land use plan area, or within two miles of a public airport. There are four heliports within the vicinity (less than 2 miles) of the proposed project, but the proposed improvements would not include any features that would exacerbate safety hazards, excessive noise, or other conditions associated with the heliports. Therefore, there would be no impact.

3.9.3.3 Mitigation Measures

Mitigation Measure HAZ-1: Soil Screening and Soil Management Plan

This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they would not involve ground disturbance.

As proposed improvements are to occur at several locations, there is a possibility of construction personnel encountering previously unknown or undocumented contamination while conducting earth-moving activities. Visual and olfactory observations are commonly used for screening purposes to identify potentially contaminated soils during construction. Uncontaminated native soils typically have distinct color and bedding, as well as other physical attributes (e.g., organic or peaty odors). Chemically impacted soils can exhibit a coloration that is distinctly different from surrounding uncontaminated soil. Often when construction equipment first encounters contaminated soils, a change in color is first noted, and, soon afterward, a distinct odor is detected. These odors can range from smells that are characteristic of oils or lubricants to sweeter smells, often associated with solvents.

If suspected affected soils are encountered, construction should seek the professional recommendation of a consultant specializing in the identification of hazardous materials. Suspect soil should be isolated, covered, and bypassed by construction personnel until analytical results are reviewed by the qualified consultant.

If contaminated soil is confirmed to exist by the qualified consultant, a licensed Professional Geologist, Professional Engineering Geologist, or Professional Engineer will be retained to prepare a Soil Management Plan. The Soil Management Plan will include the following:

- Site characterization, including testing, to determine the full extent of potential areas of concern and all potential contaminants of concern.
- Procedures for profiling and disposal of contaminated soil. The plan will describe the process for excavation, stockpiling, dewatering, treating, and/or loading and hauling of soil from the site, if necessary.
- Site worker safety procedures to ensure compliance with 29 CFR Part 120, Hazardous Waste Operations and Emergency Response regulations for site workers at uncontrolled hazardous waste sites.
- The Los Angeles County Fire Department, the local CUPA, will be notified of the discovery. The impacted soil will be handled and disposed of in accordance with the requirements of the CUPA.

The County and their contractors will implement all requirements of the Soil Management Plan.

Mitigation Measure HAZ-2: Contaminated Groundwater Management

This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.

If contaminated groundwater is encountered during construction, a licensed Professional Geologist, Professional Engineering Geologist, or Professional Engineer will be retained to

prepare a Groundwater Management Plan. The Groundwater Management Plan will include the following:

- Site characterization documenting the extent and the type of the contamination present.
- Procedures for profiling and disposal of contaminated groundwater. The plan will describe the process for dewatering, treating, and/or disposing of groundwater from the site, if necessary.
- Site worker safety procedures to ensure compliance with 29 CFR Part 120, Hazardous Waste Operations and Emergency Response, regulations for site workers at uncontrolled hazardous waste sites.
- The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), and/or the CUPA will be notified of the discovery. Any impacted dewatering fluid will be treated and disposed of in accordance with the requirements of the Regional Board and/or the CUPA.

The County and their contractors will implement all requirements of the Soil Management Plan.

Mitigation Measure HAZ-3: Trench Slurry

This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.

If contaminated groundwater is encountered during construction, replacement improvements, or new pipeline construction, a preferential migration pathway for groundwater may be reduced or eliminated by backfilling the pipeline trench with a slurry that would be sufficient to seal off the trench from the impacted groundwater. A plan for such an installation will be prepared and submitted to the Regional Board and/or the CUPA for review and approval as required.

Mitigation Measure HAZ-4: Contaminated Soil Disposal

This mitigation measure applies to construction of all the District 29 improvements included in this project, except for the District 29 Creek Crossing Repairs because they do not involve ground disturbance.

Contaminated soil encountered during construction activities would be removed and tested for level of contamination. If the soil is not considered to be hazardous, it may be disposed of at a Class III landfill. If the soil is deemed hazardous, it would be transported in accordance with hazardous waste regulations to a Class I landfill (Buttonwillow or Westmorland, both of which have adequate daily and total capacity) for final disposal.

3.9.3.4 Level of Significance after Mitigation

With implementation of **MM-HAz-1** through **MM-HAZ-4**, impacts related to hazards and hazardous materials would be reduced to less-than-significant levels.

3.10 Hydrology and Water Quality

This section describes the current hydrology and water quality environmental and regulatory setting, the potential impacts that would result from implementation of the proposed project, and mitigation measures, if necessary.

3.10.1 Environmental and Regulatory Setting

3.10.1.1 Environmental Setting

The District 29 service area is located in the Malibu Hydrologic Unit, which includes both surface and groundwater resources. The hydrologic unit encompasses approximately 200 square miles and includes three major watersheds: Malibu Creek coastal watershed, Topanga Creek watershed, and the rural Santa Monica Mountains (SMM) watersheds.

Surface Water

Surface water features in the study area include: the Pacific Ocean to the south (Santa Monica Bay); creeks draining the hillsides and canyons of the adjacent SMM to the ocean, including Malibu Creek and Topanga Creek; and three lagoons at the mouths of creeks—Malibu Lagoon, Dume Lagoon, and Topanga Lagoon (Figure 3.10-1, to follow). The U.S Geological Service (USGS) quadrangle maps (Malibu Beach, Canoga Park, Point Dume, Topanga, Point Mugu, and Triunfo Pass) show 44 blue line streams within the City of Malibu (including perennial and ephemeral or intermittent) and one in unincorporated portions of the County in the District 29 project area. (Los Angeles County 2016a)

There are 62 subwatersheds within the boundaries of Malibu, as well as coastal terrace watersheds with headwaters a few hundred feet above the ocean and 28 major mountain drainages. The largest watershed is the Malibu Creek coastal watershed that drains approximately 74,000 acres (116 square miles) via Malibu Creek. Malibu Creek is the only cross-mountain watershed, draining portions of Simi Valley, as well as Malibu. Other large coastal watersheds are Ramirez, Las Flores, Solstice, Trancas, Zuma Topanga, and Arroyo Sequit. (Los Angeles County 2016a)

Flooding and Stormwater

The Los Angeles County Flood Control District (LACFCD) was created in 1915 to provide flood protection, water conservation, and recreation and aesthetic enhancement within its boundaries. LACFCD owns and maintains a broad network of drainage infrastructure within 86 incorporated cities and unincorporated Los Angeles County, including dams, reservoirs, spreading grounds, debris basins, sediment placement sites, pump plants, seawater intrusion barriers, open channels, underground storm drains, and catch basins. (LACFCD 2019)

Localized flooding occurs during peak storm events along the coast and within low lying areas upstream. Within District 29, flood hazard zones have been defined by the Federal Emergency Management Agency (FEMA) and are mapped on federal Flood Insurance Rate Maps (FIRM) (Los Angeles County 2016a). Within the study area, 100-year floodplain is mapped along Topanga Creek, as well as some areas adjacent to the coastline. The footprints for three of the District 29 improvements are within or immediately adjacent to 100-year floodplains: (5) PCH 8-inch Waterline

Improvements (Zumirez Drive to Escondido Beach Road), (6) PCH and Topanga Beach Drive Waterline Improvements, and (8) Big Rock Bypass Improvements. One crossing repair location is in the 100-year floodplain: (3) District 29 Creek Crossing Repairs (21203 PCH) (Figure 3.10-2, to follow).

The stormwater drainage system constructed in Malibu and Topanga carries runoff to Malibu Lagoon and Santa Monica Bay. Where the creeks or other drainages cross the Pacific Coast Highway (PCH) or a local street, the flow is collected and channeled into culverts under the roads. Depending on specific location, the drainage facilities along PCH are owned, operated, and maintained by the City of Malibu, County of Los Angeles, or the California Department of Transportation (Caltrans). The upper portions of the study area rely largely on natural drainages.

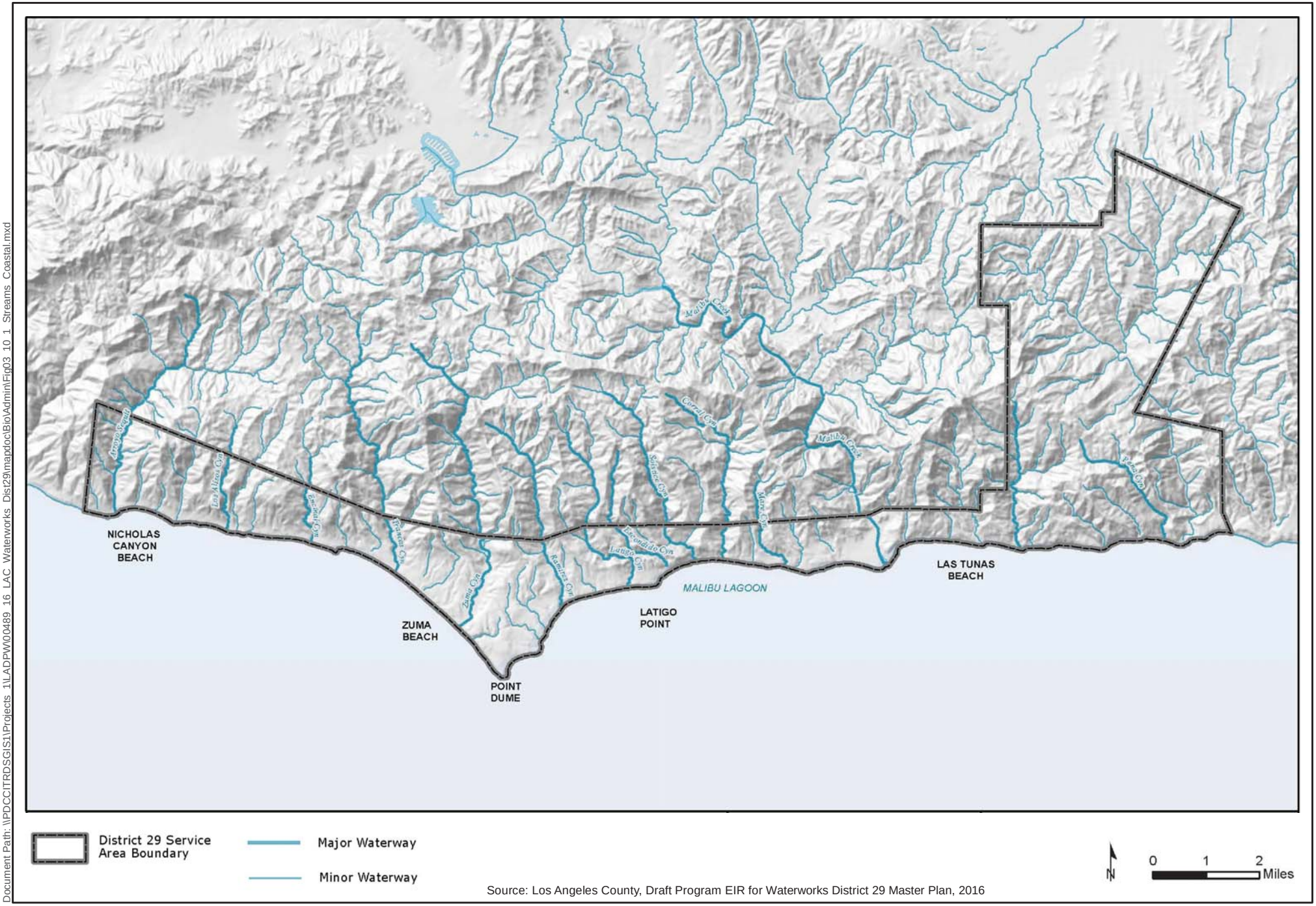
Because the District 29 area surface waters do not have USGS streamflow gages (Los Angeles County 2016a), no USGS stormwater flow data are available.

Potential Flooding by Tsunami

The entire District 29 coastline is subject to inundation by tsunami or seismic sea waves. The City of Malibu General Plan Safety Element, Figure S-11, shows tsunami runups in feet for 100-year and 500-year occurrences. The predicted runups are 5 to 7 feet for a 100-year event and 8 to 12 feet for a 500-year event[1] (Malibu 2017). The City of Malibu's Emergency Management Plan, adopted in 2012, was written to address planned response to extraordinary emergency or disaster situation associated with natural disasters, including tsunamis. It was designed to include the City of Malibu as part of the Los Angeles Operational Area, California Standardized Emergency Management System (SEMS), and National Incident Management System (NIMS). (Malibu 2012)

A USGS study in the wake of the 2011 Tohoku deadly magnitude 9.1 earthquake and resulting tsunami modeled the effects of a similar earthquake and tsunami off the coast of Alaska in an area that tends to focus waves toward the California coast, especially southern California. In this model, it was predicted that the wave event would occur approximately 4 to 6 hours after the earthquake. The study found that inundation from this scenario at Pacific Coast Highway near Malibu Lagoon would be 1.5 meters (approximately 5 feet), which is within range of the tsunamis predicted in the Malibu General Plan. (USGS 2013)

[1] 100-year and 500-year flooding event does not mean that they would occur every 100 or 500 years. Rather it means that there is a 1 in 100 chance that flooding would occur for a 100-year event, and 1 in 500 chance of flooding for the 500-year event.



Source: Los Angeles County, Draft Program EIR for Waterworks District 29 Master Plan, 2016

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Figure 3.10-1
Streams and Coastal Features
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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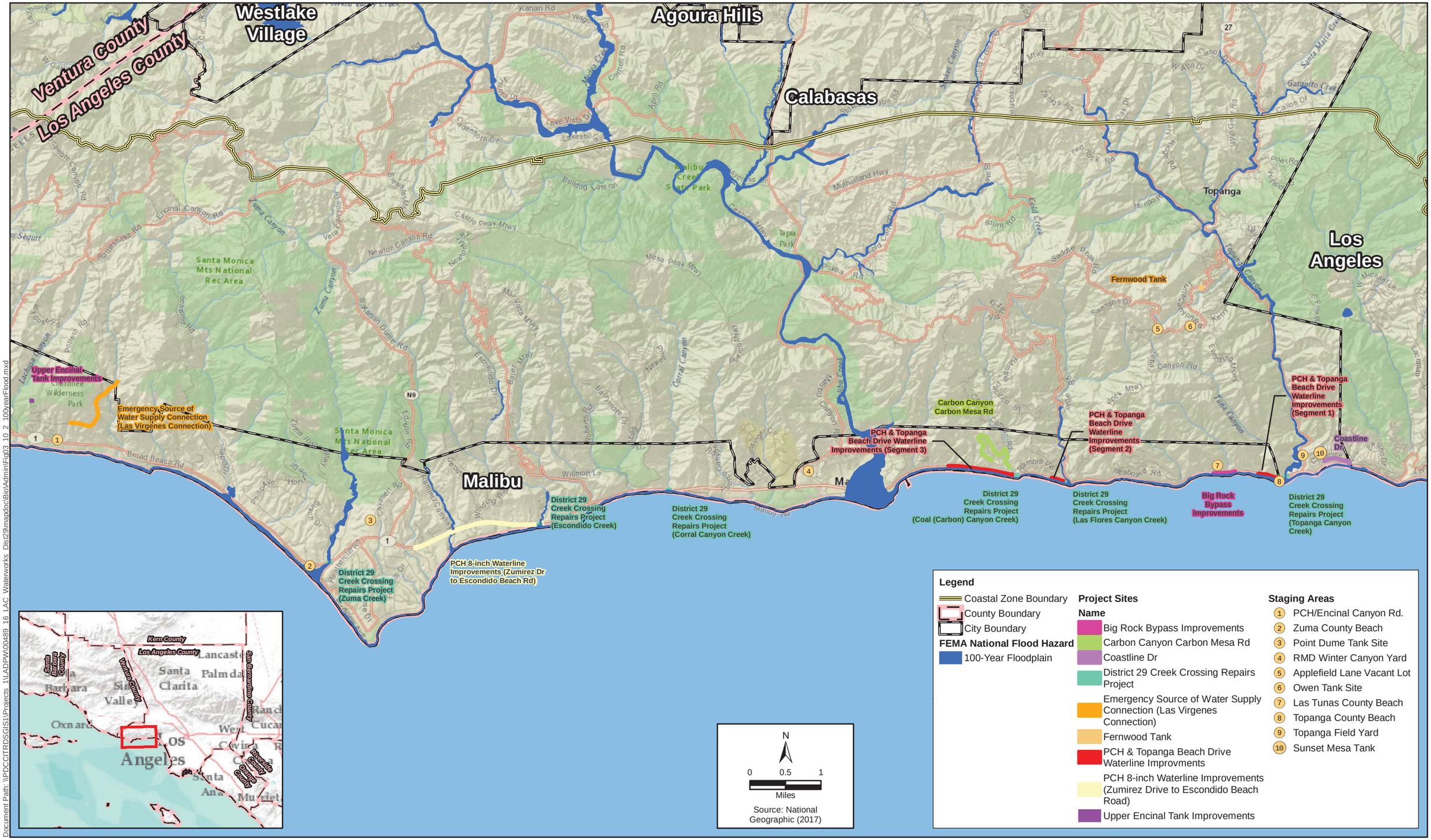

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Figure 3.10-2
100-Year Floodplain
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Surface Water Discharges

Malibu Creek receives tertiary treated effluent (fishable-swimmable quality) from the Tapia Water Reclamation Facility (TWRF) in Calabasas. TWRF is operated by Las Virgenes Municipal Water District (LVMWD) and the Triunfo Sanitation District and has a wastewater treatment capacity of 16 million gallons per day (mgd), but flow currently averages about 9.5 mgd (LVMWD 2019). LVMWD is prohibited from discharging to Malibu Creek from April 15 to November 15 every year. However, when the creek flow drops below 2.5 cubic feet per second (cfs) during this period, LVMWD is required to release recycled water from TWRF to provide downstream habitat (water pools) for the endangered steelhead trout (Los Angeles RWQCB 2017).

Wetlands

Malibu Lagoon, at the mouth of Malibu Creek, is the largest wetland in the District 29 area. Malibu Lagoon is a brackish estuary approximately 13 acres in area and one of two remaining coastal marshes in Los Angeles County. The estuary drains into the ocean when flows are high enough to breach the sandbar that forms across its outlet. Because the flows are highly variable, water quality and quantity in the lagoon also vary. Water quality and beneficial uses of the lagoon are considered impaired for bacteria and trash, as described below. Smaller wetlands in the District 29 study area are Dume Lagoon and Topanga Lagoon.

Surface Water Quality

Surface water quality in the study area is affected by upstream discharges of treated effluent; stormwater conveyance of fertilizers, manure, petroleum projects (oil, gasoline, lubricants), and car exhaust chemicals; livestock; commercial discharges; and sedimentation and pathogens from septic systems. Much of the chemical contamination is originally derived from the surfaces of pavement and other forms of hardscape. Increased sediment loads are associated with grading, excavation, and other forms of vegetation disturbance, such as fires, grazing, agricultural practices, and vegetation removal for fire and flood control (Malibu 2017) (See the discussion of Total Maximum Daily Loads, below.)

Groundwater

There are three groundwater basins in District 29: Point Dune area, Malibu Valley, and Topanga Canyon area. Groundwater in the Malibu area is not well understood because of the complexity of underlying geology. Groundwater investigations in the area have been inconclusive in determining definitive information on subsurface recharge and discharge. Historic wells and springs have largely gone dry or been contaminated by seawater intrusion and are no longer used. The few private groundwater wells that remain serve individual homes or small developments. Sources of groundwater within the study area are chiefly underflow from the upper watersheds, direct rainfall, streamflow, irrigation runoff, and septic system seepage (Malibu 2017).

The primary factors that affect the presence of groundwater in the Malibu area are seasonal and annual precipitation patterns, topography, soils and rock permeability, and faults. Many of the rock formations in the area are not conducive to holding groundwater. Groundwater can be found along the coast in alluvium, beach deposits, and terrace deposits at only a few feet. The depth of groundwater increases in the consolidate rock of inland areas and can reach several hundred feet. The dominant source of groundwater recharge in the area is groundwater flow from the upper portions

of watersheds. Other sources include more localized percolation of rainfall, streamflow, irrigation runoff, and septic systems.

Water Quality Standards

The Los Angeles Regional Water Quality Control Board (RWQCB) establishes water quality standards for the Los Angeles Region Basin in its Water Quality Control Plan, commonly known as the Basin Plan. The Basin Plan was adopted in September 2014 (Los Angeles RWQCB 2014), and has been amended as recently as 2018 (Los Angeles RWQCB 2018b). Water quality standards consist of a combination of beneficial uses and water quality objectives. Beneficial uses are the designations established for water bodies in the state to describe the resources, services, and qualities of the water bodies that benefit the people of California. They serve as a basis for establishing water quality objectives. Water quality objectives are the allowable limits or levels of water quality constituents or characteristics that are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area (California Water Code Section 13000).

Beneficial Uses

This section presents designated beneficial uses for surface waters and groundwater. Beneficial uses are categorized for the major water bodies in the region, including inland surface waters, groundwater, coastal waters, and coastal wetlands. Beneficial uses are designated as either existing or potential. Definitions of the beneficial uses that are designated for waters in District 29 are provided in Table 3.10-1.

Table 3.10-1. Definitions of Beneficial Uses for Waters in District 29

Category		Definition
AGR	Agriculture Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
BIOL	Preservation of Biological Habitats	Uses of water that support designated areas or habitats such as Areas of Special Biological Significance (ASBS), established refuges, parks, sanctuaries, ecological reserves, or other areas where the preservation or enhancement or natural resources requires special protection.
COLD	Cold Freshwater Habitat	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife.
COMM	Commercial and Sport Fishing	Uses of water for commercial or recreational collection of fish, shellfish or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
EST	Estuarine Habitat	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
GWR	Groundwater Recharge	Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.

Category		Definition
IND	Industrial Service Supply	Uses of water for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.
MAR	Marine Habitat	Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
MIGR	Migration of Aquatic Organisms	Uses of water that support habitats necessary for migration, acclimatization between fresh and saltwater, or other temporary activities by aquatic organisms such as anadromous fish.
MUN	Municipal and Domestic Supply	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
NAV	Navigation	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
RARE	Preservation of Rare, Threatened, or Endangered Species	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.
REC-1	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, white water activities, and fishing.
REC-2	Non-contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
SHELL	Shellfish Harvesting	Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.
SPWN	Spawning, Reproduction and/or Early Development	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
WARM	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
WET	Wetland Habitat	Uses of water that support wetland ecosystems including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife and other unique wetland functions that enhance water quality such as providing floods and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

Category		Definition
WILD	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Note: Only beneficial uses occurring in District 29 defined in this table.
Source: Los Angeles RWQCB 2014.

Inland Surface Waters Beneficial Uses

Beneficial uses identified for inland surface waters in the Malibu Creek watershed within the District 29 area are shown on Table 3.10-2.

Table 3.10-2. Beneficial Uses of Inland Surface Waters in District 29

Coastal Streams	Existing Beneficial Uses	Potential Beneficial Uses
Arroyo Sequit	WARM, GRW (intermittent),COLD, WILD, RARE, MIGR, SPWN, WET, REC-1, REC-2	MUN
San Nicholas Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Los Alisos Canyon Creek	WARM (intermittent), WILD, RARE, REC-1 (intermittent), REC-2 (intermittent)	MUN
Lachusa Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Encinal Canyon Creek	WARM (intermittent), WILD, RARE	MUN
Trancas Canyon Creek	MUN, WARM, WILD, RARE, REC-1,[1] REC-2 (intermittent)	
Dume Lagoon	NAV, COMM, EST, WILD, RARE, REC-1, REC-2	MIGR, SPWN, WET
Dume Creek (Zuma Canyon)	MUN, WARM, COLD, WILD, RARE, MIGR, SPWN, REC-1, REC-2	
Ramirez Canyon Creek	MUN (intermittent), WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	SPWN
Escondido Canyon Creek	MUN (intermittent), WARM, (intermittent), WILD, RARE, REC-1 (intermittent), REC-2 (intermittent)	
Latigo Canyon Creek	MUN (intermittent), WARM, (intermittent), WILD, RARE, REC-1 (intermittent), REC-2 (intermittent)	
Solstice Canyon Creek	MUN, WARM, WILD, REC-1, REC-2	MIGR, SPWN
Puerco Canyon Creek	MUN (intermittent), WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	
Corral Canyon Creek	MUN (intermittent), WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	
Carbon Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Las Flores Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Piedra Gorda Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN

Coastal Streams	Existing Beneficial Uses	Potential Beneficial Uses
Pena Canyon Creek	WARM (intermittent), COLD, WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Tuna Canyon Creek	WARM (intermittent), WILD, REC-1 (intermittent), REC-2 (intermittent)	MUN
Topanga Lagoon	NAV, COMM, EST, WILD, RARE, MIGR, SPWN, WET, REC-1, REC-2	
Topanga Canyon Creek	WARM, COLD, WILD, RARE, REC-1 (intermittent), REC-2 (intermittent)	MUN

Notes:
Beneficial Uses are defined in Table 3.10-1.
[1] Access prohibited by Los Angeles County in the concrete-channelized areas.
Source: Los Angeles RWQCB 2014.

Groundwater Beneficial Uses

The Basin Plan designates beneficial uses of three groundwater basins in District 29: Point Dune area, Malibu Valley, and Topanga Canyon area. These are described in Table 3-10-3.

Table 3.10-3. Beneficial Uses of Groundwater Basins in District 29

Water Basin	Existing Beneficial Uses	Potential Beneficial Uses
Point Dume area	MUN, AGR	IND
Malibu Valley	AGR	MUN, IND
Topanga Canyon area	AGR	MUN, IND

Source: Los Angeles RWQCB 2014.

Beneficial Uses of Coastal Waters

The Basin Plan designates beneficial uses of coastal waters, including nearshore zones, offshore zones, and specific beaches. The nearshore zone is defined as the zone bounded by the shoreline and a line 1,000 feet from the shoreline or the 30-foot depth contour, whichever is farther from the shoreline. The beneficial uses of coastal waters in District 29 are described in Table 3.10-4.

Table 3.10-4. Beneficial Uses of Coastal Waters in District 29

Coastal Feature	Existing Beneficial Uses	Potential Beneficial Uses
Nearshore zone	IND, NAV, COMM, MAR, WILD, BIOL, RARE, MIGR, SPWN, SHELL	
Offshore zone	IND, NAV, COMM, MAR, WILD, RARE, MIGR, SPWN, SHELL	
Nicolaus Canyon Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Trancas Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Zuma County (Westward) Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Dume State Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Dume Lagoon	NAV, COMM, EST, WILD, RARE, SHELL, WET	MIGR, SPWN

Coastal Feature	Existing Beneficial Uses	Potential Beneficial Uses
Escondido Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Dan Blocker Memorial (Corral) Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Puerco Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Amarillo Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Malibu Beach	NAV, COMM, MAR, WILD, MIGR, SPWN, SHELL	
Malibu Lagoon	NAV, EST, MAR, WILD, RARE, MIGR, SPWN, WET	
Carbon Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
La Costa Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Las Flores Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Las Tunas Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Topanga Beach	NAV, COMM, MAR, WILD, SHELL	SPWN
Topanga Lagoon	NAV, COMM, EST, WILD, RARE, MIGR, SPWN, WET	

Source: Los Angeles RWQCB 2014.

Beneficial Uses of Coastal Wetlands

The Basin Plan designates beneficial uses of three coastal wetlands: Dume Lagoon, Malibu Lagoon, and Topanga Lagoon. The beneficial use of coastal wetlands in District 29 are described in Table 3.10-5.

Table 3.10-5. Beneficial Uses of Coastal Waters in District 29

Coastal Feature	Existing Beneficial Uses	Potential Beneficial Uses
Dume Lagoon	NAV, COMM, EST, WILD, RARE, WET	MIGR, SPWN
Malibu Lagoon	NAV, EST, MAR, WILD, RARE, MIGR, SPWN, WET	
Topanga Lagoon	NAV, COMM, EST, WILD, RARE, MIGR, SPWN, WET	

Source: Los Angeles RWQCB 2014.

Water Quality Objectives

This section presents established numeric and narrative water quality objectives necessary to protect the established beneficial uses. Water quality objectives are intended to protect the public health and welfare and maintain or enhance water quality in relation to the designated and potential beneficial uses of the water. Any actions that can adversely affect water quality must be consistent with the maximum benefit to the people of the state, must not unreasonably affect present and anticipated beneficial use of such water, and must not result in water quality less than that prescribed in water quality plans and policies.

Table 3.10-6 lists the numerical and narrative water quality objectives that are applicable to all inland surface waters and enclosed bays and estuaries (including wetlands) in the Basin. Table 3.10-7 lists the numerical and narrative water quality objectives that are applicable to groundwaters in the Basin.

In some cases, there are specific water quality objectives for waters in the District 29 area. These are included in Table 3.10-8.

Table 3.10-6. Regional Water Quality Objectives for Surface Waters

Parameter	Summary of Water Quality Objectives
Ammonia	In order to protect aquatic life, ammonia concentrations in freshwater inland surface waters must not exceed the values calculated for the appropriate instream conditions shown in Tables 3-1 to 3-3 of the Basin Plan.[1] For non-freshwater inland surface waters, the 4-day average concentration of un-ionized ammonia must not exceed 0.035 mg/L and the 1-hour average concentration must not exceed 0.233 mg/L. In order to protect underlying groundwater basins, ammonia must not be present at levels that when oxidized to nitrate, pose a threat to groundwater quality.
Coliform Bacteria	**REC-1 marine waters:** • Geometric mean limits (density must not exceed): a. Total coliform: 1,000/100 ml b. Fecal coliform: 200/100 ml c. *Enterococcus*: 35/100 ml • Single sample limits (density must not exceed): a. Total coliform: 10,000/100 ml b. Fecal coliform: 400/100 ml c. *Enterococcus*: 104/100 ml Total coliform 1000/100 ml if ratio of fecal-to-total coliform > 0.1 **REC-1 freshwater:** • Geometric mean limits (density must not exceed): a. *E.coli*: 126/100 ml • Single sample limits (density must not exceed): a. *E.coli*: 235/100 ml **REC-2:** • Concentration must not exceed log mean of 2000/100 ml (based on a minimum of not less than four samples for any 30-day period) • More than 10 percent of samples collected during any 30-day period must not exceed 4000/100 ml. **SHELL:** • For any 30-day period median total coliform concentration throughout water column must not exceed 70/100 ml • For any 30-day period more than 10 percent of samples collected must not exceed 230/100 ml for five-tube decimal dilution test or 330/100 ml for three-tube decimal dilution test.
Bioaccumulation	Toxic pollutants must not be present at levels that will bioaccumulate in aquatic life to levels which are harmful to aquatic life or human health.
Biochemical Oxygen Demand (BOD^5)[2]	Waters must be free of substances that result in increases in the BOD that adversely affect beneficial uses.
Biostimulatory Substances[3]	Waters must not contain biostimulatory substances in concentrations that promote aquatic growth to extent that such growth causes nuisance or adversely affects beneficial uses.
Chemical Constituents	• **Surface waters** must not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. • **MUN:** must not contain concentrations of chemical constituents in excess of the limits specified in Tables 3-8 and 3-9 of the Basin Plan.

Parameter	Summary of Water Quality Objectives
Chlorine, Total Residual	Must not be present in surface water discharges at concentrations > 0.1 mg/L and must not persist in receiving waters at any concentration that causes impairment of beneficial uses.
Color	Waters must be free of coloration that causes nuisance or adversely affects beneficial uses.
Exotic Vegetation	Must not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.
Floating Material	Waters must 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)	**MUN:** concentrations must not have MBAs >0.5 mg/L.
Mineral Quality	Numerical mineral quality objectives for individual inland surface waters are contained in Table 3-10 of the Basin Plan.
Nitrogen (Nitrate, Nitrite)	Must 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 or as otherwise designated in Table 3-10 of the Basin Plan.
Oil and Grease	Waters must 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 that otherwise adversely affect beneficial uses.
Oxygen, Dissolved (DO)	• **All waters:** At a minimum, the mean annual DO concentration of all waters must be greater than 7 mg/L, and no single determination must be less than 5.0 mg/L, except when natural conditions cause lesser concentrations. • **WARM**: DO content must not be depressed below 5 mg/L as a result of waste discharges. • **COLD:** DO content must not be depressed below 6 mg/L as a result of waste discharges. • **Both COLD and SPWN:** DO content must not be depressed below 7 mg/L as a result of waste discharges.
Pesticides	• No individual pesticide or combination of pesticides must be present in concentrations that adversely affect beneficial uses. • Shall be no increase in pesticide concentrations found in bottom sediments or aquatic life. • **MUN:** must not contain concentrations of pesticides in excess of the limiting concentrations specified in Table 3-9 of the Basin Plan.
pH	• **Inland surface waters:** must not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels must not be changed more than 0.5 units from natural conditions as a result of waste discharge. • **Bays and estuaries**: must not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels must not be changed more than 0.2 units from natural conditions as a result of waste discharge.

Parameter	Summary of Water Quality Objectives
Polychlorinated Biphenyls (PCBs)	• Purposeful discharge of PCBs to waters of the Region or at locations where the waste can subsequently reach waters of the Region, is prohibited. • Pass-through or uncontrollable discharges to waters of the Region, or at locations where the waste can subsequently reach water of the Region, are limited to ○ 70 pg/L (30-day average) for protection of human health ○ 14 ng/L (daily average) to protect aquatic life in inland freshwaters ○ 30 ng/L (daily average) to protect aquatic life in inland estuarine waters
Radioactive Substances	• Must 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. • **MUN:** must not contain concentrations in excess of the limits specified Table 3-12a and 3-12b of the Basin Plan.
Solid, Suspended or Settleable Materials	• Must not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.
Taste and Odor	• Must 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	• **All waters:** Natural receiving water temperature must not be altered unless it can be demonstrated to the satisfaction of the Los Angeles RWQCB that such alteration in temperature does not adversely affect beneficial uses. • **WARM:** Water temperature must not be altered by more than 5°F above the natural temperature. At no time must these waters be raised above 80°F as a result of waste discharges. • **COLD:** Water temperature must not be altered by more than 5°F above the natural temperature. • **Enclosed bays and estuaries:** Objectives are specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" (Thermal Plan), including any revisions thereto.

Parameter	Summary of Water Quality Objectives
Toxicity	• All waters must be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the State Water Resources Control Board (SWRCB) or RWQCB. • The survival of aquatic life in surface waters, subjected to a waste discharge or other controllable water quality factors, must not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, other control water. • There must be no acute toxicity in ambient waters, including mixing zones. The acute toxicity objective for discharges dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests must be at least 90 percent, with no single test having less than 70 percent survival when using an established EPA, SWRCB, or other protocol authorized by the RWQCB. • There must be no chronic toxicity in ambient waters outside mixing zones. To determine compliance with this objective, critical life stage tests for at least three species with approved testing protocols must be used to screen for the most sensitive species. The test species used for screening must include a vertebrate, an invertebrate, and an aquatic plant. The most sensitive species must then be used for routine monitoring. Typical endpoints for chronic toxicity tests include hatchability, gross morphological abnormalities, survival, growth, and reproduction. • Effluent limits for specific toxicants can be established by Los Angeles RWQCB to control toxicity identified under Toxicity Identification Evaluations (TIEs).
Turbidity	Waters must be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors must not exceed the following limits: • Where natural turbidity is between 0 and 50 NTU, increases must not exceed 20 percent. • Where natural turbidity is greater than 50 NTU, increases must not exceed 10 percent. • Allowable zones of dilution within which higher concentrations may be tolerated may be defined for each discharge in specific Waste Discharge Requirements
Regional Narrative Objectives for Wetlands (in addition to regional objectives, above)	
Hydrology	Natural hydrologic conditions necessary to support the physical, chemical, and biological characteristics present in wetlands must be protected to prevent significant adverse effects on: • Natural temperature, pH, dissolved oxygen, and other natural physical/chemical conditions, • Movement of aquatic fauna, • Survival and reproduction of aquatic flora and fauna, and • Water levels.

Parameter	Summary of Water Quality Objectives
Habitat	Existing habitats and associated populations of wetlands fauna and flora must be maintained by: • Maintaining substrate characteristics necessary to support flora and fauna which would be present naturally, • Protecting food supplies for fish and wildlife, • Protecting reproductive and nursery areas, and • Protecting wildlife corridors.

Notes:

[1] The freshwater 30-day average objective is dependent on pH, temperature, and the presence or absence of early life stages of fish.

[2] BOD^5 is the residual dissolved oxygen after a period of incubation (5 days at 20°C)

[3] Biostimulary substances include excess nutrients (nitrogen, phosphorus) and other compounds that stimulate aquatic growth.

Definitions:

°C degrees Celsius
E. coli Escherichia coli
EPA U.S. Environmental Protection Agency
NTU Nephelometric Turbidity Unit
mg/L milligrams per liter
ml milliliter
ng/L nanogram per liter
pg/L picogram per liter

Source: Los Angeles RWQCB 2014

Table 3.10-7. Regional Water Quality Objectives for Ground Waters

Parameter	Summary of Water Quality Objectives
Bacteria	**MUN:** Concentration of coliform organisms over any seven-day period must be less than 1.1/100 ml.
Chemical Constituents & Radioactivity	• **MUN: must** not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in Tables 3-8, 3-9, 3-12a, and 3-12b of the Basin Plan. • **All ground waters:** must 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.
Nitrogen (Nitrate & Nitrite)	Must 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.
Taste & Odor	Must not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

mg/L milligrams per liter
ml milliliter

Source: Los Angeles RWQCB 2014

Table 3.10-8. Specific Water Quality Objectives for Waters in District 29 Area

Waterbody	Total Dissolved Solids (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron (mg/L)	Nitrogen (mg/L)
Surface Waters					
Malibu Creek Watershed	2,000	500	500	2.0	10
Groundwater					
Malibu Valley	2,000	500	500	2.0	No standard
Malibu Valley: Point Dune Area	1,000	250	250	1.0	No standard
Malibu Valley: Topanga Canyon	2,000	500	500	2.0	No standard

mg/L milligrams per liter
Source: Los Angeles RWQCB 2014

Total Maximum Daily Loads

The Los Angeles RWQCB is responsible for implementing provisions and pollution control requirements that the federal Clean Water Act (CWA) specifies for surface waters of the U.S. within its region. CWA Section 303(d) of the CWA requires the state to identify "impaired" water bodies (surface water bodies that do not fully achieve their designated beneficial uses and/or are in noncompliance with water quality objectives). Following the identification of impaired water bodies, the state establishes a priority list that identifies the pollutants that cause the impairments and then develops pollutant loading limits called Total Maximum Daily Loads (TMDLs) for each pollutant. The TMDL analysis seeks to establish quantifiable and measurable numeric targets. These targets must ensure compliance with water quality standards (beneficial uses and water quality objectives).

The following TMDLs, and related reconsiderations and implementation plans, have been approved for waters in District 29 area.

Malibu Creek Watershed TMDL for Nutrients Malibu Creek and Lagoon TDML for Nutrients and Sedimentation

These TDMLs were established by the U.S. Environmental Protection Agency (EPA)) in 2003 (Malibu Creek Watershed) and 2013 (Malibu Creek and Lagoon) as part of a consent decree between EPA, Heal the Bay, and Santa Monica BayKeeper resolving litigation over the pace of TMDL in Los Angeles Region. The consent decree divided the Los Angeles Region into 92 TMDL analytical units, including the Malibu Creek Watershed (analytical unit 50). Under the consent decree, TMDL were required to be established for nutrient-related pollutants. In 2010 the parameters were added to include benthic-macroinvertebrate bioassessments and sedimentation/siltation for Malibu Creek and benthic community effects for Malibu Lagoon. The EPA-established TMDLs included required numeric targets, loading capacity, load allocations, and waste load allocations, but not implementation plans or schedules, which are not required by EPA. (Los Angeles RWQCB 2016b)

An implementation plan for these TDMLs was approved by the Los Angeles RWQCB as an amendment to the Basin Plan (Implementation Plan Malibu Creek Watershed TMDL for Nutrients and Malibu Creek and Lagoon for Nutrients and Sedimentation to Address Benthic Impairments, Resolution R16-009, May 16, 2018) (Los Angeles RWQCB 2016b).

Malibu Creek Watershed Bacteria TDML

This TDML was approved by the Los Angeles RWQCB as an amendment to the Basin Plan (Resolution No. R04-019, January 29, 2004). This TMDL addressed bacteria in the Malibu Creek Watershed and included an implementation plan requiring reduction of bacteria loading for dry and wet weather. This TMDL was revised, and approved by the State Water Resources Control Board (SWRCB) (September 22, 2005), the California Office of Administrative Law (OAL) (December 1, 2005), and EPA (January 10 2006). The effective date for the revised TMDL was January 24, 2006. This TDML had a scheduled reconsideration for the Los Angeles RWQCB to consider a natural source exclusion for bacteria loading from birds; reassess allowable dry-weather and wet-weather exceedances days; and re-evaluate whether there was a need to further clarify or revise the geometric mean implementation provision. This scheduled reconsideration was approved by Los Angeles RWQCB on June 7, 2012 (Resolution June 7, 2012). (Los Angeles RWQCB 2012)

Malibu Creek Watershed Trash TMDL

This TMDL was approved by Los Angeles RWQCB as an amendment to the Basin Plan (Resolution No. 2008-007, effective July 7, 2009). The TMDL addressed impairments of water quality for impaired waters in the watershed caused by trash. It established a numeric target of zero trash based on the narrative water quality objectives for floating material and solid (suspended or settleable) materials. It assigned waste load allocations (WLAs) to discharges from the municipal separate storm sewer system within the watershed. A scheduled reconsideration of the TMDL was approved in 2018 (Resolution No. R18-006, June 14, 2018). In it, Los Angeles RWQCB reviewed and reconsidered the final 5 years of WLAs in the TMDL. (Los Angeles RWQCB 2018a)

3.10.1.2 Regulatory Setting

This section provides an overview of the pertinent federal, state, and local policies governing hydrology and water quality for the proposed project.

Federal

Clean Water Act

The federal Clean Water Act (CWA) of 1977 (33 U.S. Code [U.S.C] § 1251 et seq.), which amended the federal Water Pollution Control Act of 1972, established the basic structure for regulating discharges of pollutants into the waters of the U.S. (not including groundwater). The CWA delegates authority to the EPA to implement pollution control programs. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters. In addition, the CWA requires that states adopt EPA-approved water quality standards for water bodies. Water quality standards consist of two components: designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing) and the water quality criteria necessary to support those uses.

Section 303: Impaired Water Bodies (303[d] List) and Total Maximum Daily Loads

Section 303(d) of the CWA requires each state to identify and list impaired surface waters that do not meet, or that the state expects will not meet, state water quality standards. This is a subset of the 305(b) list, which contains information on all water bodies. The water quality standards are promulgated under the National Toxics Rule (NTR) or the California Toxics Rule (CTR) after minimum technology-based effluent limitations have been implemented for point sources. For these waters, the

RWQCBs are required to develop TMDLs of pollutants for impaired water bodies and a program of implementation to meet the TMDLs. The TMDL must account for the pollution sources that caused the water bodies to be listed by the state. The TMDL is a calculation of the maximum amount of a pollutant that a water body can receive while still meeting water quality standards. TMDLs also define an allocation of that load among the various sources of that pollutant (i.e., municipalities, other permitted entities). Additionally, the TMDL can act as a plan to reduce pollutant loading, which improves water quality. After implementation of a TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list will be remediated.

The SWRCB has combined its 303(d) list and the 305(b) report into the 2014 and 2016 California Integrated Report (SWRCB 2018). After approval of the 303(d) list portion of the California Integrated Report by the SWRCB, the complete California Integrated Report was submitted to EPA, which approved the 303(d) list portion of the California Integrated Report on April 6, 2018 (EPA 2018).

Section 401: Water Quality Certification

Section 401 certification provides for the protection of the physical, chemical, and biological integrity of waters. Section 401 of the CWA requires a federal permit to obtain certification from the state to comply with the provisions of the CWA. Applicants are required to meet the effluent limitations and monitoring requirements necessary to ensure compliance with the federal license or permit.

Section 402: National Pollutant Discharge Elimination Permits

Section 402 of the CWA establishes the NPDES permit program to regulate all discharges to waters of the U.S., including stormwater associated with construction activities, industrial operations, municipal drainage systems, and point sources, to protect surface water quality. The NPDES permit program controls, minimizes, or reduces surface water impacts. The NPDES program is applicable to all discharges to waters of the U.S., including stormwater associated with construction activities, industrial operations, municipal drainage systems, and point sources, to protect surface water quality. Two types of the NPDES program stormwater permits would be relevant to the proposed project. These are discussed below in the *State* section.

National Flood Insurance Act and Flood Disaster Protection Act

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were enacted to reduce the need for flood protection structures and limit disaster relief costs by restricting development in floodplains. FEMA administers programs associated with these acts. One of FEMA's duties is to administer the National Floodplain Insurance Program (NFIP) and develop standards for fluvial and coastal floodplain delineation. The NFIP is a federal program that enables property owners in participating communities to purchase insurance to protect against flood losses in exchange for state and community floodplain management regulations in order to reduce future flood damages.

State

Porter-Cologne Water Quality Control Act

All discharges of waste to waters of the state are subject to regulation under the Porter-Cologne Water Quality Control Act. Water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDRs). The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) includes the California Toxics Rule; the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of

California (State Implementation Plan or SIP); Inland Surface Water Quality Standards; the California Urban Water Management Act; and NPDES permits. Discharges to state waters are subject to NPDES permits.

National Pollutant Discharge Elimination System

In California, the SWRCB and RWQCBs within the state are responsible for compliance with the CWA. They are responsible for assessing water quality monitoring data for surface waters every 2 years to determine if they contain pollutants that exceed the levels established in water quality standards. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities.

The SWRCB and RWQCBs implement, monitor, and enforce the NPDES permitting requirements within their jurisdictions. In general, the regulations require all communities with populations of more than 50,000 to develop programs for reducing pollutants carried by stormwater runoff into waters of the U.S. As with WDRs, the SWRCB and RWQCBs can issue individual NPDES permits to cover individual dischargers or general permits (state or regional) to cover a category of dischargers.

Construction General Permit

Pursuant to CWA Section 402(p), and as related to the goals of the Porter-Cologne Water Quality Control Act, the SWRCB has issued a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-009-DWQ, NPDES No. CAS000002, as amended by Order 2010-014-DWQ and 2012-06-DWQ) (Construction General Permit), adopted September 2, 2009. Every construction project that disturbs 1 or more acres of land surface or that is part of a common plan of development or sale that disturbs more than 1 acre of land surface requires coverage under the Construction General Permit. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area.

Municipal General Permit

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer System (MS4s). Phase I MS4 permit regulations cover medium-size municipalities (between 100,000 and 250,000 people) and large municipalities (more than 250,000 people). Phase II MS4 permit regulations require that stormwater management plans/programs be developed by municipalities with populations of less than 100,000, including non-traditional small MS4s, which are facilities such as military bases, public campuses, and prison and hospital complexes.

Local and Regional

Los Angeles Basing Water Quality Control Plan (Basin Plan)

The Porter-Cologne Water Quality Control Act authorizes the RWQCBs to adopt, review, and revise policies for all waters of the state (including both surface and groundwater) and directs them to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt Basin Plans on its own initiative. The RWQCBs are required, by law, to develop, adopt, and implement a Basin Plan for the entire region. Water quality standards are set forth in the regional Basin Plan.

According to Section 13050 of the California Water Code, Basin Plans consist of designation or establishment of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives for the waters within a specified area. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the state and federal requirements for water quality control.

Beneficial uses of waters within the proposed project are discussed in Section 3.10.1.1, *Environmental Setting*. The Basin Plan specifies the water quality objectives for the all inland surface waters and enclosed bays and estuaries (including wetlands) in the region.

Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles

Discharges of treated or untreated groundwater generated from permanent or temporary dewatering operations or other applicable wastewater discharges not specifically covered in other general or individual NPDES permits are currently regulated under a regional general permit, General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-095, NPDES No. CAG994004). However, in the event that groundwater is encountered during construction, it would be covered under the NPDES Construction General Permit.

Los Angeles County Municipal Stormwater NPDES Permit (MS4 Permit)

In December 2012, the Los Angeles RWQCB issued an MS4 Permit (Order No. R4-2012-0175; NPDES Permit No. CAS004001) covering discharges within coastal watersheds from the collective storm sewer systems in Los Angeles County (except from the City of Long Beach). (It was amended September 8, 2016, for modifications to Ballona Creek and Los Angeles River Watersheds, outside the District 29 project area.) The MS4 Permit regulates the discharge of stormwater runoff to waters of the U.S. from facilities owned and maintained by the Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within Los Angeles County (collectively referred to as Permittees). The purpose of the MS4 Permit is to achieve and maintain water quality objectives to protect beneficial uses of the receiving waters in the Los Angeles region. (Los Angeles County Water Boards 2019)

In compliance with the MS4 permit, LACDPW has developed an Enhanced Watershed Management Program (EWMP) for the North Santa Monica Bay Watersheds, which includes the Malibu area. The EWMP is intended to facilitate effective, watershed-specific MS4 Permit implementation strategies, including specific strategies, control measures, and best management practices (BMPs) necessary to achieve water quality targets. (Los Angeles RWQCB 2016b)

Malibu Local Coastal Program Local Implementation Plan

Chapter 17 of the Malibu Local Coastal Program Local Implementation Plan is the Water Quality Protection Ordinance (City of Malibu 2016). It prohibits that alterations or disturbance of streams or natural drainage course or human-made or altered drainage courses that have replaced natural streams or drainages and serve the same function. There are exceptions, one of which is for "necessary water supply projects where no feasible alternative exists." Even with this exception, which would be applicable to the District 29 project, the ordinance states that the project "shall minimize impacts to coastal resources, including the depletion of groundwater, and must include maximum feasible

mitigation measures to mitigate unavoidable impacts." The ordinance also includes BMPs, but these are applicable to development projects, and would not be applicable to the District 29 project.

3.10.2 Impacts and Mitigation

3.10.2.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Violation of any water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality.
- Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantial alteration of 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 that would result in substantial erosion or siltation onsite or offsite.
- Substantial alteration of the existing drainage pattern of the site or area that would increase the rate or amount of surface runoff, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in flooding on- or off-site.
- Substantial alteration of the existing drainage pattern of the site or area that would increase the rate or amount of surface runoff, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- In flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation.
- Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan.

3.10.2.2 Impacts

The District 29 project includes nine improvements.

- **Improvement 1, Carbon Canyon Road and Carbon Mesa Road Improvements,** would replace underground pipelines in existing roadways. This location is not within a 100-year floodplain, and its inland location makes it unlikely to be affected by tsunamis or for construction to encounter shallow groundwater.
- **Improvement 2, Coastline Drive 12-inch Waterline Improvements,** would replace underground pipelines in existing roadways. This location is not within a 100-year floodplain. It is located close to the coast, but on a bluff at approximately 180 feet in elevation. This higher location makes it unlikely to be affected by tsunamis. Construction would be unlikely to encounter shallow groundwater.
- **Improvement 3, District 29 Creek Crossing Repairs,** is a series of creek crossings. Although these would be located at creeks, all construction would occur within the existing rights-of way and would not include ground disturbance, so the construction would not encounter shallow

groundwater. One of the crossings, Topanga Canyon Creek, is within the 100-year floodplain. All of the crossings could be affected by tsunamis.

- **Improvement 4, Fernwood Tank Improvement**, would remove two tanks and replace them with a new larger tank. This location is at approximately 1,300 feet in elevation. It is not in a 100-year floodplain and would not be affected by tsunamis, and construction would not encounter shallow groundwater.
- **Improvement 5, PCH 8-inch Waterline Improvements (**Zumirez Drive to Escondido Beach Road**),** would replace underground pipelines in existing roadways. Near its eastern end (Escondido Beach Road), the improvements would be in or very near to the 100-year floodplain (coastal). At this eastern end it could also be affected by tsunamis, and construction could encounter shallow groundwater.
- **Improvement 6, PCH and Topanga Beach Drive Waterline Improvements,** would replace underground pipelines in existing roadways. At several locations along these pipelines, the improvements are in or near the 100-year floodplain (coastal). These locations could also be affected by tsunamis, and construction could encounter shallow groundwater.
- **Improvement 7, Emergency Source of Water Supply Connections** (Las Virgenes Connection), would construct new transmission waterline connecting to the LVMWD in case of emergencies on the main line. All work would be performed within the public road right-of-way. This location ranges from approximately 500 to 800 feet in elevation. It is not in a 100-year floodplain and would not be affected by tsunamis, and construction would not encounter shallow groundwater.
- **Improvement 8, Big Rock Bypass Improvements,** would construct a bypass for the mainline within public road right-of-way. The location is in or near the 100-year floodplain (coastal). It could also be affected by tsunamis, and construction could encounter shallow groundwater.
- **Improvement 9, Upper Encinal Tank Improvement,** would remove an existing 70,000-gallon tank and construct a 225,000-gallon tank in the same location. The location is at an elevation of approximately 825 feet. It is not in a 100-year floodplain and would not be affected by tsunamis, and construction would not encounter shallow groundwater.

LACDPW has prepared a Construction Site BMP Manual to assist contractors in the process of selection and implementation of construction site BMPs (LACDPW 2010). Table 3.10-9 list the BMPs expected to be used to protect stormwater quality during construction.

Table 3.10-9. District 29 Project Construction BMPs (Stormwater, Non-Stormwater)

BMP No. and Title	Summary	Application
Slope Stabilization (SS)-1 Scheduling	Sequencing of construction activities with implementation of construction site BMPs such as temporary soil stabilization (erosion control) and temporary sediment control measures.	All improvements and staging areas.
SS-2 Preservation of Existing Vegetation	Identification and protection of desirable vegetation that provides erosion and sediment control benefits.	Fernwood Tank Improvement and construction staging areas, if vegetation would be removed.

BMP No. and Title	Summary	Application
SS-5 Soil Binders	Applying and maintaining a soil stabilizer to exposed soil surfaces.	All improvements, if ground disturbance is included, including unpaved construction staging areas where minor grading to create a flat surface may be required, if necessary to prevent erosion.
SS-6 Straw Mulch	Placing a uniform layer of straw and incorporating it into the soil with a studded roller or anchoring it with a stabilizing emulsion.	Fernwood Tank Improvements (or SS-7).
SS-7 Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets	Placement of geotextiles, mats, plastic covers, or erosion control blankets to stabilize disturbed soil areas and protect soils from erosion by wind or water.	Fernwood Tank Improvements (or SS-6).
Sediment Control (SC)-1 Silt Fence	Temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff.	Fernwood Tank Improvements.
SC-7 Street Sweeping and Vacuuming	Street sweeping or vacuuming to remove tracked sediment.	All improvements and staging areas.
SC-8 Sandbag Barrier	Temporary linear sediment barrier consisting of stacked sandbags, designed to intercept and slow the flow of sediment-laden sheet flow runoff.	All improvements and staging areas.
SC-10 Storm Drain Inlet Protection	Includes devices used at storm drain inlets that are subject to runoff from construction activities to detain and/or filter sediment-laden runoff to allow sediment to settle and/or to filter sediment prior to discharge into storm drainage systems or watercourses.	All improvements and staging areas if storm drain inlets are present.
Tracking Control (TC)-1 Stabilized Construction Entrance/Exit	Stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto all paved surfaces and paved private and public roads by construction vehicles.	Construction staging areas (if not paved) and Fernwood Tank Improvements.
Non-Storm Water Management (NS)-2 Dewatering Operations	Practices that manage the discharge of pollutants when non-stormwater and accumulated precipitation (stormwater) must be removed from a work location so that construction work may be accomplished.	All improvements and staging areas if dewatering is required.

BMP No. and Title	Summary	Application
NS-3 Paving and Grinding Operations	Procedures and practices for conducting paving, concrete slurry, cement or masonry, saw cutting, and grinding operations to minimize the transport of pollutants to the storm drain system or receiving water body.	All improvements where saw-cutting, grinding, or paving is needed.
NS-8 Vehicle and Equipment Cleaning	Vehicle and equipment cleaning procedures and practices are used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to the ground, storm drain system, or watercourses.	All improvements.
NS-9 Vehicle and Equipment Fueling	Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks onto the ground (impervious or pervious site surfaces) or into storm drain systems or to watercourses.	All improvements, if onsite vehicle or equipment refueling occurs.
NS-10 Vehicle and Equipment Maintenance	Procedures and practices to minimize or eliminate the discharge of pollutants to the storm drain systems or to watercourses from vehicle and equipment operation, maintenance, and modification procedures.	All improvements, if onsite vehicle or equipment maintenance occurs.
NS-12 Concrete Curing	Concrete curing includes the use of both chemical and water methods. Proper procedures minimize pollution of runoff during concrete curing.	All improvements, if concrete curing is included.
NS-13 Material and Equipment Use Over Water	Procedures for the proper use, storage, and disposal of materials and equipment on bridges, barges, boats, temporary construction pads, or similar locations that minimize or eliminate the discharge of potential pollutants to a watercourse.	All creek crossing repairs.
NS-14 Concrete Finishing	Concrete finishing methods are used for bridge deck rehabilitation, paint removal, curing compound removal, final surface finish appearances, and other construction operations that remove or add to concrete surfaces. Methods include sand blasting, shot blasting, grinding, high pressure water blasting, or other method. Proper procedures minimize the impact that concrete finishing methods may have on runoff.	All improvements, if concrete finishing is included.

BMP No. and Title	Summary	Application
Materials and Waste Management (WM)-1 Material Delivery and Storage	Procedures and practices for the proper handling and storage of materials in a manner that minimizes or eliminates the discharge of these materials to the ground, storm drain system, or watercourses	All improvements and construction staging areas.
WM-2 Material Use	Procedures and practices for use of construction material in a manner that minimizes or eliminates the discharge of these materials to the ground, storm drain system, or watercourses.	All improvements.
WM-3 Stockpile Management	Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, and paving materials such as Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called “cold mix” asphalt), green waste, and other materials and wastes.	All improvements where stockpiles are included.
WM-4 Spill Prevention	Procedures and practices are implemented to prevent, control, and clean up spills in a manner that minimizes or prevents the discharge of spilled material to the permeable or impermeable ground surface, drainage system or watercourses.	All improvements and construction staging areas.
WM-5 Solid Waste Management	Procedures and practices are designed to minimize or eliminate the discharge of pollutants offsite, to the ground, drainage systems, or watercourses.	All improvements and construction staging areas.
WM-6 Hazardous Waste Management	Procedures and practices to minimize or eliminate the discharge of pollutants from contractor-generated waste or waste illegally dumped onsite by others that is hazardous waste, or waste that is otherwise not allowed to be disposed of as solid waste, to the ground, storm drain systems, or watercourses.	All improvements and construction staging areas.
WM-8 Concrete Waste Management	Procedures and practices that are designed to minimize or eliminate the discharge of concrete waste and similar materials to the ground, storm drain systems, or watercourses.	All improvements, if concrete is used or concrete demolition is required.

BMP No. and Title	Summary	Application
WM-9 Sanitary/Septic Waste Management	Procedures and practices to minimize or eliminate the discharge of construction site sanitary/septic waste materials to the storm drain system or to watercourses.	All improvements, if temporary or portable sanitary/septic waste systems are used.

Source: LACDPW 2010
WM = materials and waste management
NS = non-storm water management
SC = sediment control
SS = slope stabilization
TC = tracking control

Individual improvements that would disturb 1 or more acres during construction (including staging and stockpiling) would be required to comply with the Construction General Permit under the statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity. This would require a monitoring plan to determine the effectiveness of the BMPs.

Impact HWQ-X.a.

Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than significant.

Construction

Surface Water Impacts

Construction of all eight of the District 29 project improvements could degrade surface water quality. Such impacts would occur through the creation of erosion, sedimentation, and/or polluted runoff that discharges to surface waters. Topography at the construction sites, or near it, can be relatively rugged, which could affect runoff during storm events and increase the potential that construction activities at each of the sites could lead to surface water degradation.

Underground Pipeline Replacements

This analysis covers the following projects: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) PCH and Topanga Beach Drive Waterline Improvements, Emergency Source of Water Supply Connection (Las Virgenes Connection), and Big Rock Bypass Improvements. The construction activities that could degrade surface water quality would include cutting and removing pavement, excavation of trenches, stockpiling of excavated materials, removal of existing pipes, replacement of pipes, refilling of trenches, and repaving. Other construction activities that could impair surface waters at these locations include use of heavy construction equipment, especially the potential for washing, refueling, and maintenance of this equipment; dewatering; transportation of equipment and materials to the site; possible use of hazardous materials; disposal of waste materials; and use of temporary sanitary systems.

District 29 Creek Crossings Repairs

For the District 29 Creek Crossings Repairs, the construction activities that could degrade surface water quality would include work over creeks or drainage courses (whether water is present or not during construction); removal and replacement of pipes; use of heavy construction equipment, especially the potential for washing, refueling, and maintenance of this equipment; possible use of hazardous materials; street sweeping during or after construction; transportation of equipment and materials to the site; possible use of hazardous materials; disposal of waste materials; and use of temporary sanitary systems.

Fernwood Tank Improvements

For the Fernwood Tank Improvement, construction activities that could degrade surface water quality would include work done to clear the site, such as demolition of existing tanks, cutting and removing pavement, disposal of demolition waste, grading, excavation, stockpiling of excavated materials, and vegetation removal. Construction activities that could affect surface water quality during new tank construction (both the temporary tank and new tank) would include delivery of materials to the site, possible use of hazardous materials, materials stockpiling, paving and other uses of concrete, and removal of the temporary tank. Both the demolition and construction phase would also require construction activities that could affect surface water quality, including use of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; dewatering; transportation of equipment and materials to the site; disposal of waste materials; and use of temporary sanitary systems.

Construction activities that could degrade surface water quality at construction staging areas include grading and vegetation removal (if the site is not paved), and paving of the site; transportation of equipment and materials to and from the site; stockpiling of materials, potentially including hazardous materials; use and storage of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; disposal of waste materials; and use of temporary sanitary systems.

With implementation of the Los Angeles County sediment control, erosion control, waste, and material management BMPs, described in Table 3.10-9, and the requirements of the Construction General Permit, construction impacts would be less than significant and would not lead to a violation of water quality standards or waste discharge requirements.

Fernwood Tank Improvements

For the Fernwood Tank Improvement, construction activities that could degrade surface water quality would include work done to clear the site, such as demolition of existing tanks, cutting and removing pavement, disposal of demolition waste, grading, excavation, stockpiling of excavated materials, and vegetation removal. Construction activities that could affect surface water quality during new tank construction (both the temporary tank and new tank) would include delivery of materials to the site, possible use of hazardous materials, materials stockpiling, paving and other uses of concrete, and removal of the temporary tank. Both the demolition and construction phase would also require construction activities that could affect surface water quality, including use of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; dewatering; transportation of equipment and materials to the site; disposal of waste materials; and use of temporary sanitary systems.

Construction activities that could degrade surface water quality at construction staging areas include grading and vegetation removal (if the site is not paved), and paving of the site; transportation of equipment and materials to and from the site; stockpiling of materials, potentially including hazardous materials; use and storage of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; disposal of waste materials; and use of temporary sanitary systems.

With implementation of the Los Angeles County sediment control, erosion control, waste, and material management BMPs, described in Table 3.10-9, and the requirements of the Construction General Permit, construction impacts would be less than significant and would not lead to a violation of water quality standards or waste discharge requirements.

Upper Encinal Tank Improvements

For the Upper Encinal Tank Improvement, construction activities that could degrade surface water quality would include work done to clear the site, such as demolition of the existing tank, cutting and removing pavement, disposal of demolition waste, grading, excavation, stockpiling of excavated materials, and vegetation removal. Construction activities that could affect surface water quality during new tank construction would include delivery of materials to the site, possible use of hazardous materials, materials stockpiling, paving and other uses of concrete, and removal of the temporary tank. Both the demolition and construction phases would also require construction activities that could affect surface water quality, including use of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; dewatering; transportation of equipment and materials to the site; disposal of waste materials; and use of temporary sanitary systems.

Construction activities that could degrade surface water quality at construction staging areas include grading and vegetation removal (if the site is not paved), and paving of the site; transportation of equipment and materials to and from the site; stockpiling of materials, potentially including hazardous materials; use and storage of heavy equipment, especially the potential for washing, refueling, and maintenance of this equipment; disposal of waste materials; and use of temporary sanitary systems.

With implementation of the Los Angeles County sediment control, erosion control, waste, and material management BMPs, described in Table 3.10-9, and the requirements of the Construction General Permit, construction impacts would be less than significant and would not lead to a violation of water quality standards or waste discharge requirements.

Groundwater Impacts

Impacts of construction activities on groundwater would be limited. In the Malibu area, groundwater is not generally used, except at higher elevations where there are some private wells. Near the coast, the groundwater is generally affected by saltwater intrusion.

Construction of all improvements except the Fernwood Tank Improvement and Upper Encinal Improvement could degrade groundwater due to similar activities as described for surface waters because the groundwater in this area is very close to the surface and mixes with surface and seawater. Fernwood Tank Improvement is farther inland and at a higher elevation. There is the potential for private wells in the area. Construction could degrade groundwater due to similar activities as described for surface water, especially in areas of excavation and from the use of hazardous materials.

However, the use of hazardous materials is anticipated to be minor overall and not likely to result in significant quantities that could infiltrate into the ground if accidentally spilled or discharged. The Upper Encinal Improvement could also degrade groundwater under the site during construction. There are likely few, if any, private wells in downslope areas from the site—areas that have no development. Construction could degrade groundwater due to similar activities as described for surface water, especially in areas of excavation and from the use of hazardous materials. However, the use of hazardous materials is anticipated to be minor overall and not likely to result in significant quantities that could infiltrate into the ground if accidentally spilled or discharged.

With implementation of the Los Angeles County BMPs, including spill prevention and hazardous waste management, as described in Table 3.10-9, construction impacts would be less than significant and would not lead to a violation of water quality standards or waste discharge requirements.

Operation

Following construction, operation of the improvements would have limited if any impacts on surface- or groundwater. Underground pipelines would require little or no maintenance, so these improvements would have no impacts. For creek crossings, only inspection and minimal maintenance (cleaning, tightening, etc.) would be required, with less-than-significant potential to impact surface or groundwater. For the replaced water tank, routine inspection and maintenance would occur at the site. This maintenance would have less-than-significant potential to impact surface- or groundwater given the limited activities required. Therefore, impacts of operation of the District 29 project would not lead to violations of water quality standards or waste discharge requirements and would be less than significant

Impact HWQ-X.b

Would the project substantially decrease groundwater supplies or substantially interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than significant.

Construction

As discussed for Impact HWQ-X.a, construction activities and operations would have minimal groundwater effects. The improvements would not decrease groundwater supplies or substantially interfere with groundwater recharge because the project improvements would increase the amount of pervious surfaces by a minimal amount (slightly increased tank footprints) and because the minor excavations are unlikely to penetrate the groundwater. Therefore, the District 29 project would not impede sustainable groundwater management of the Los Angeles Region Basin.

During construction of the following improvements, dewatering would only include surface water accumulation from rainfall or irrigation runoff and/or shallow groundwater that is not used due to saltwater intrusion:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements
- Coastline Drive 12-inch Waterline Improvements
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)
- PCH and Topanga Beach Drive Waterline Improvements

- Emergency Source of Water Supply Connection (Las Virgenes Connection)
- Big Rock Bypass Improvements

Dewatering may also be required for the Fernwood Tank Improvement excavations. Dewatering impacts would be reduced or avoided by implementing the Los Angeles County BMPs, such as NS-2, Dewatering Operations, which includes practices that manage the discharge of pollutants.

The Fernwood Tank Improvement and Upper Encinal Tanks are the only improvements that would include impermeable surfaces (tank cover and surrounding paving). However, the demolition of two tanks and construction of one larger tank at each site would result in minimal, if any, changes in the area covered with impermeable surfaces.

Construction staging areas, where located on unpaved ground, may lead to increased compaction of soils. This compaction would not result in appreciable changes to groundwater recharge due to the negligible amount of new compacted area.

Because of the limited amount of dewatering and implementation of Los Angeles County BMPs, and the limited changes in impervious surfaces, the District 29 project would have less-than-significant impacts on groundwater supplies, groundwater recharge, or sustainable groundwater management of the Los Angeles Region Basin.

Operation

Operation of the District 29 improvements would not result in impacts on groundwater supplies or substantially interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin, Operation of the pipelines and tanks would be nearly identical to the existing conditions. There would be no impacts.

Impact HWQ-X.c.i.

Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?

Less than significant.

Construction

Construction related to all improvements except the District 29 Creek Crossing Repairs and Fernwood Tank Improvement (underground pipeline replacement or construction) would temporarily alter local drainage patterns across the roadway rights-of-way where these improvements are located. Because this construction would take place in paved roadways, the potential for erosion and siltation would be minimal. The District 29 Creek Crossing Repairs would not affect drainage patterns in a manner that could result in erosion and siltation on or off site because no changes to the creek itself are anticipated. For the Fernwood Tank Improvement, replacement of two tanks with one larger tank would temporarily change surface drainage across the site, which could lead to erosion and siltation.

With implementation of the Los Angeles County BMPs for sediment and erosion control, as described in Table 3.10-9, construction impacts related to alteration of existing drainage patterns, siltation, and sedimentation would be reduced, and the impact would be less than significant.

Operation

No permanent changes to drainage patterns would occur at any of the improvements in the District 29 project. After replacing the underground pipes, drainage patterns across the roadway rights-of-way would be the same as the existing conditions. The District 29 Creek Crossing Repairs would not affect drainage during or after construction because no changes to the creek itself are anticipated. After construction, the drainage across the site of the Fernwood Tank Improvement would be returned to the preconstruction condition, so there would be no permanent impacts on existing drainage patterns, siltation, and sedimentation; impacts would be less than significant.

Impact HWQ-X.c.ii.

Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Less than significant.

Construction

Construction would result in minimal changes to the amount of surface runoff. With implementation of the Los Angeles County BMPs, described in Table 3.10-9, construction impacts related to the amount of surface water runoff would not result in onsite or offsite flooding. Impacts would be less than significant.

Operation

No permanent changes to the amount of surface runoff would occur at any of the improvements in the District 29 project. After construction, the underground pipe replacements locations would have the same surface runoff conditions as the existing conditions. The District 29 Creek Crossing Repairs would not affect surface runoff during or after construction because no changes to the creek itself are anticipated.

After construction, the drainage across the site of the Fernwood Tank Improvement would be returned to the preconstruction condition, ensuring that drainage across the site would be the same as the existing condition, and no offsite flooding impacts would result. While there may be a slight increase of impervious surface from the larger tank, there would be a negligible increase in the amount of surface runoff compared to existing conditions. The District 29 project would not result in a substantial increase in flooding onsite or offsite. Impacts would be less than significant.

After construction, drainage across the Upper Encinal Tank Improvement site would be designed with swales and slopes to manage the runoff from the larger pervious areas, including the larger tank. Controlling the runoff on site would allow the site to be returned to its preconstruction condition, ensuring that drainage across and off the site would be the same as the existing condition; thus, there would be no offsite flooding impacts. While there may be an increase of impervious surface from the larger tank, there would be a negligible increase in the amount of surface runoff compared to existing conditions due to the runoff-controlling design. The District 29 project would not result in a substantial increase in flooding onsite or offsite. Impacts would be less than significant.

Impact HWQ-X.c.iii.

Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant.

Construction

As discussed in Impact HWQ-X.c.ii, construction would result in minimal changes to the amount of surface runoff. With implementation of the Los Angeles County BMPs, described in Table 3.10-9, construction impacts related to the amount of surface water runoff would not create or contribute to runoff that would exceed the capacity of existing or planned stormwater drainage systems. Impacts would be less than significant.

Operation

Runoff resulting from the improvements in the District 29 project after construction would be similar to existing conditions. Therefore, the project would not affect any existing or planned stormwater drainage systems. The project would not provide substantial additional sources of polluted runoff. Impacts would be less than significant.

Impact HWQ-X.d.

In flood hazard, tsunami, or seiche zones, would the project risk the release of due to project inundation?

Less than significant.

Construction

The following improvements (or parts thereof) are within or very near 100-year flood plains:

- PCH 8-inch Waterline Improvements (eastern end)
- PCH and Topanga Beach Drive Waterline Improvements (multiple locations)
- Big Rock Bypass Improvements
- District 29 Creek Crossing Repairs (Topanga Canyon Creek only)

The following improvements (or parts thereof) would be susceptible to tsunamis because they are at low elevation and near the coastline:

- District 29 Creek Crossing Repairs (all locations)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (eastern end)
- Topanga Beach Drive Waterline Improvements (multiple locations)
- Big Rock Bypass Improvements

Some construction staging areas would also be in the tsunami zone. Therefore, during a flood event or tsunami there is the potential for these construction sites to release pollutants if they are inundated.

Storms in the Malibu area are tracked carefully due to the potential for flooding and mudslides in the area. In case of flood watches or warnings, construction in susceptible areas would be stopped and the site secured to prevent release of pollutants to the maximum extent practicable. With implementation of the Los Angeles County BMPs, described in Table 3.10-9, construction impacts related to the amount of surface water runoff would not result in onsite or offsite flooding. Impacts would be less than significant.

Usually plenty of warning time is available for tsunamis. Although local earthquakes could produce a substantial tsunami, most events are from distant earthquakes, allowing time to evacuate the likely inundation area, including securing the low-lying coastal construction site. If a 100-year or 500-year tsunami were to occur (as predicted in the Malibu General Plan), damage on or near the lower-lying portions of PCH and the improvements and construction staging sites along PCH would likely be devastating. Even implementation of the Los Angeles County BMPs related to management of wastes would not likely completely prevent polluted runoff from these project sites in a devastating tsunami. However, because of the limited amount of materials used for the improvements, the impacts from the inundation at the District 29 project would be less than significant.

Seiches are resonant oscillations in semi-enclosed water bodies, such as Santa Monica Bay. This oscillation can be triggered by moderate or larger local submarine earthquakes, and sometimes by large, more distant, regional earthquakes. Seiching was record at Santa Monica following moderate (magnitude 5.0-5.2) earthquakes under Santa Monica Bay in 1930, 1979, and 1989. The maximum height of these long period waves was about 2 feet. If such oscillations occurred during storm conditions or unusually high tides, damaging coastal inundation could result. The duration of these oscillations may be several hours. Impacts from seiches would be similar to tsunamis and would be less than significant,

Operation

Operation of the improvements would not result in release of pollutants given it is water infrastructure. Therefore, impacts of operation of the District 29 project would not result in release of pollutants if flooded or inundated by a tsunami; impacts would be less than significant.

Impact HWQ-X.e.

Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than significant.

Construction and Operational

As discussed in Impacts HWQ-X.a, HWQ-X.b, HWQ-X.c.1, and HWQ-X.c.iii, the District 29 project would have minimal impacts on water quality and groundwater. Therefore, construction and operation of the project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be less than significant.

3.10.2.3 Mitigation Measures

The improvements in the District 29 project, including implementation of mandatory Los Angeles County BMPs, would result in less-than-significant impacts. No mitigation measures are required.

3.11 Land Use

This section provides an overview of existing land uses, land-use designations, and applicable plans and policies. It also evaluates the potential for land use and planning impacts associated with the proposed project. Because proposed project improvements would be located in the city of Malibu and in portions of unincorporated Los Angeles County, applicable land-use plans and policies for each jurisdiction are presented in this section. Specifically, this section includes an analysis of potential impacts resulting from a conflict with any applicable plans or physically dividing an established community.

3.11.1 Environmental Setting

The proposed project is located within the city of Malibu and the western portion of Los Angeles County. Most of the Malibu and portions of the Los Angeles County are located within the Coastal Zone, as defined by the California Coastal Act (discussed in more detail below, in Section 3.11.2, *Regulatory Setting*). The Topanga-area portion of the project area is not in the Coastal Zone.

3.11.1.1 Land Use within Study Area

The District 29 improvements study area (the area where the proposed improvements and staging areas are located) is located mostly within the city of Malibu, with some areas in the unincorporated areas of Los Angeles County. In this section, the existing land uses at each location and their land-use designation (on the sites and immediately adjacent to the sites, i.e., the properties bordering the sites), under the applicable general plan is identified. Tables 3.11-1 and 3.11-2 list the existing and designated land uses at the improvement sites and the staging areas, respectively.

Table 3.11-1. District 29 Improvement Sites – Existing and Designated Land Uses

Improvement		Existing Land Use	Land Use Plan Land Use Designation
1	Carbon Canyon Road & Carbon Mesa Road Waterline Improvements	Roadway Single-family residential	Jurisdiction: Malibu Malibu Local Coastal Plan[1] RR2–Rural Residential 2 ac[3]/du[4] RR10–Rural Residential 10 ac/du
2	Coastline Drive 12-inch Waterline Improvements	Roadway Single-family residential Multifamily residential	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program[2] U8–Residential (8 du/ac) U20–Residential (8 du/ac)
3a	District 29 Creek Crossing Repairs: Topanga Canyon Creek Site	Roadway Park/beach Open space	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program OS-P–Open Space Park

Improvement		Existing Land Use	Land Use Plan Land Use Designation
3b	District 29 Creek Crossing Repairs: Pena Canyon Creek Site	Roadway Single-family residential Park/beach Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR20–Rural Residential 20 ac/du POS–Public Open Space
3c	District 29 Creek Crossing Repairs: Los Flores Canyon Creek Site	Roadway Multifamily residential Commercial Beach	Jurisdiction: Malibu Malibu Local Coastal Plan SFM–Single Family Medium–4 du/ac POS–Public Open Space
3d	District 29 Creek Crossing Repairs: Coal (Carbon) Canyon Creek Site	Roadway Single-family residential Institutional (fire station) Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR2–Rural Residential 2 ac/du Institutional SFM–Single Family Medium–4 du/ac
3e	District 29 Creek Crossing Repairs: Corral Canyon Creek Site	Roadway Open space Commercial Beach	Jurisdiction: Malibu Malibu Local Coastal Plan POS–Public Open Space CN–Commercial Neighborhood
3f	District 29 Creek Crossing Repairs: Escondido Creek Site	Roadway Recreational Single-family residential Commercial	Jurisdiction: Malibu Malibu Local Coastal Plan SFM–Single Family Medium–4 du/ac MF–Multi-Family Residential–6 du/ac
3g	District 29 Creek Crossing Repairs: Zuma Creek site	Roadway Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR5–Rural Residential–1 du/5 ac MH–Mobile Home Residential
4	Fernwood Tank Improvement	Institutional Single-family residential	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program RV–Rural Village
5	PCH[5] 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	Roadway Single-family residential Multifamily residential Mobile-home residential Hotel Commercial Industrial (outdoor storage) Religious facility Recreational Agricultural Open space	Jurisdiction: Malibu Malibu Local Coastal Plan SFM–Single Family Medium–4 du/ac MF–Multi-Family Residential–6 du/ac RR5–Rural Residential–1 du/5 ac RR2–Rural Residential–1 du/2ac PRF–Private Recreational Facilities CV1–Commercial Visitor Serving 1 I–Institutional MH–Mobile Home Residential

Improvement		Existing Land Use	Land Use Plan Land Use Designation
6a	PCH and Topanga Beach Drive Waterline Improvements, Segment 1	Roadway Single-family residential Commercial Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR20–Rural Residential–1du/20 ac RR40–Rural Residential 1du/40 ac SFM–Single Family Medium–4 du/ac POS–Public Open Space
6b	PCH and Topanga Beach Drive Waterline Improvements, Segment 2	Roadway Single-family residential Commercial	Jurisdiction: Malibu Malibu Local Coastal Plan MF–Multi-Family Residential–6 du/ac CV1–Commercial Visitor Serving 1 MFBF–Multi Family Beach Front CN–Commercial Neighborhood SFM–Single Family Medium–4 du/ac
6c	PCH and Topanga Beach Drive Waterline Improvements, Segment 3	Roadway Single-family residential Multifamily residential Commercial Office/commercial Institutional (fire station) Open space	Jurisdiction: Malibu Malibu Local Coastal Plan I–Institutional SFM–Single Family Medium–4 du/ac MF–Multi-Family Residential–6 du/ac CC–Community Commercial CN–Commercial Neighborhood CV1–Commercial Visitor Serving 1
7	Emergency Source of Water Supply Connection (Las Virgenes Connection)	Roadway Residential (rural) Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR5–Rural Residential–1 du/5 ac RR20–Rural Residential–1du/20 ac
8	Big Rock Bypass Improvements	Roadway Single-family residential Park/beach Open space	Jurisdiction: Malibu Malibu Local Coastal Plan POS–Public Open Space RR20–Rural Residential–1du/20 ac
9	Upper Encinal Tank Improvement	Institutional Open space	Jurisdiction: Malibu Malibu Local Coastal Plan POS–Public Open Space POS–Public Open Space

[1] Malibu LCP: Malibu Local Coastal Program Land Use Plan (Malibu 2002)
[2] SSM LCP: Los Angeles County Santa Monica Mountains Local Coastal Program Land Use Plan
[3] ac: acre (Los Angeles County 2013)
[4] du: dwelling unit(s)
[5] PCH: Pacific Coast Highway

Table 3.11-2. District 29 Staging Sites–Existing and Designated Land Uses

Staging Areas		Existing Land Use	Land Use Plan Land Use Designation
1	Encinal Canyon Road/PCH Northwest Corner Lot	Roadway Single-family residential	Jurisdiction: Malibu Malibu Local Coastal Plan RR2–Rural Residential–1 du/2ac
1	Northwest Intersection of Encinal Canyon Road & PCH	Vacant	Jurisdiction: Malibu Malibu Local Coastal Plan RR2–Rural Residential – 1 du/2 acres
2	Zuma County Beach	Roadway/parking lot Single-family residential Park/beach	Jurisdiction: Malibu Malibu Local Coastal Plan POS–Public Open Space
3	Point Dume Tank Site	Roadway Single-family residential Institutional (County tank site) Open space	Jurisdiction: Malibu Malibu Local Coastal Plan RR5–Rural Residential–1 du/5 ac
4	Los Angeles County Road Maintenance District (RMD) Winter Canyon Yard	Roadway Recreational Institutional (county maintenance yard) Institutional (school) Religious facility Open space	Jurisdiction: Malibu Malibu Local Coastal Plan I–Institutional
5	Applefield Lane Vacant Lot	Roadway Single-family residential Open space	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program OS-P–Open Space, Parks
6	Owen Tank Site	Roadway Single-family residential Institutional (County tank site)	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program OS–Open Space
7	Las Tunas County Beach	Roadway/parking lot Single-family residential Park/beach Open space	Jurisdiction: Malibu Malibu Local Coastal Plan POS–Public Open Space
8	Topanga County Beach	Roadway/parking lot Single-family residential Commercial Park/beach Open space	Jurisdiction: Malibu Malibu Local Coastal Plan SFM–Single Family Medium–4 du/ac
9	Topanga Field Yard	Roadway Institutional (county maintenance yard) Open space	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program P–Public And Semi-Public Facilities

Staging Areas		Existing Land Use	Land Use Plan Land Use Designation
10	Sunset Mesa Tank	Single-family residential Institutional (county tank site)	Jurisdiction: Los Angeles County Santa Monica Mountain Local Coastal Program OS–Open space U8–Residential–8 du/ac

3.11.2 Regulatory Setting

3.11.2.1 Federal

There are no federal regulations related to land use applicable to the project.

3.11.2.2 State

California Coastal Zone Act of 1976

The California Coastal Act (CCA) of 1976 created a zone along the state's coastline that must be protected to preserve the state's coastal resources. The CCA directs each local government lying in whole or in part within the coastal zone to prepare a local coastal program (LCP) for the portion within the coastal zone.

3.11.2.3 Local and Regional

Below are the applicable Los Angeles County and Malibu plans, programs, and policies that are applicable only within their respective jurisdictions, including the LCPs.

Los Angeles County General Plan

The *Los Angeles County General Plan 2035*, adopted in October 2015, provides the policy framework for how and where the unincorporated areas of Los Angeles County will grow and recognizes and celebrates the County's wide diversity of cultures, abundant natural resources, and status as an international economic center. (Los Angeles County 2015) The general plan anticipates growth and will guide development in the unincorporated areas of Los Angeles County.

The County's unincorporated areas total approximately 2,650 square miles and contain a residential population of more than 1 million. A portion of the coastal prohibition zone and project area is located within unincorporated Los Angeles County.

Malibu General Plan

The *City of Malibu General Plan*, adopted in November 1995 and updated through 2017, serves as the major tool for directing growth, while maintaining an attractive, viable, and safe environment, outlining a vision for the city and establishing policies to achieve those objectives. (Malibu 2017) The *City of Malibu General Plan* provides an analysis of existing conditions in the city, including physical, social, cultural, and environmental resources and opportunities. It also looks at trends, issues, and concerns that affect the region and provides policies to guide development and change by identifying common goals, objectives, and programs.

The Malibu General Plan Land Use Element includes the following goals, objectives, policies, and objectives applicable to the project:

- **LU Objective 1.1:** Development that does not degrade the environment.
- **LU Policy 1.1.1:** The City must protect the natural environment by regulating design and permitting only land uses compatible with the natural environment.
- **LU Policy 1.1.2**: The city must ensure that land uses avoid or minimize adverse impacts to water quality and natural resources, such as undisturbed watershed and riparian areas.
- **LU Policy 1.1.3**: The city must control surface runoff into coastal waters, wetlands, and riparian areas.
- **LU Objective 1.3**: Land uses consistent with flood, geologic, and fire safety requirements.
- **LU Policy 1.3.1**: The city must regulate development in floodways.
- **LU Policy 1.3.2**: The city must require proposed development to avoid geologic safety hazards created by development.
- **LU Objective 1.5**: Integrated environmental review.
- **LU Policy 2.2.4**: The city must manage development in accordance with the efficient operation of the traffic system and service infrastructure.

Malibu Local Coastal Program

The entire city of Malibu is located within the California Coastal Zone, as defined by the CCA. On September 13, 2002, the city certified an LCP, which consists of a Land Use Plan (LUP) and a Local Implementation Plan (LIP). The LCP is intended to protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment. Functioning similar to the city's General Plan and Zoning Code (M.M.C. Title 17), the city's LCP regulates zoning and land use, as well as providing other policies and development standards pertaining to protection of coastal resources. Policies and regulations of the LCP supersede any policy or regulation of the city's General Plan or M.M.C. Zoning Code in the event of a conflict between the documents.

Santa Monica Mountains Local Coastal Program

Land-use planning and development standards in the Santa Monica Mountains (SMM) Coastal Zone are governed by the CCA. The SMM Coastal Zone in Los Angeles County extends inland from the shoreline approximately 5 miles and encompasses 80 square miles. An LCP consists of two parts: 1) a land use plan and 2) implementing measures. This LUP serves as the land-use plan for the LCP. Implementing measures for this LCP are contained in the SMM LIP, a segment of Los Angeles County Code Title 22 (Planning and Zoning Ordinance). The LUP's primary role is to provide more focused policy for the regulation of development within the planning area as part of the overall County General Plan. The LUP refines Countywide General Plan policies as they apply to this planning area.

The SMM LUP includes the following goals, objectives, policies, and objectives applicable to the project:

- **Policy LU-2.** Retain the area's natural setting, rural and semi-rural character, and scenic features.
- **Policy LU-4.** Maintain areas of diverse natural topography that provide, through the preservation of large undeveloped areas, long-range vistas of open ridgelines and mountain slopes.

- **Policy LU-5.** Prohibit development on Significant Ridgelines, following those LUP policies and standards designed to protect ridgeline resources.
- **Policy LU-6.** Preserve the physical connections between open space areas, natural habitats, public parklands, and activity centers.
- **Policy LU-7.** Preserve ridgelines and open space areas that define and maintain the rural character of developed areas.
- **Policy LU-12.** Require that the extension of water, sewer, or utility infrastructure to serve development be located within legally existing roadways and road rights-of-way in a manner that avoids creating adverse impacts to coastal resources to the maximum extent feasible. Such infrastructure will be sized and otherwise designed.

3.11.3 Impacts and Mitigation

3.11.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Physical division of an established community.
- Conflict with any land-use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.11.3.2 Impacts

Impact LU-XI.a.

Would the project physically divide an established community?

Less than significant.

The proposed project involves the replacement of two existing tanks (i.e., reservoirs) with a single 200,000-gallon reservoir tank, the replacement of approximately 34,300 feet of existing underground water pipeline, and construction of approximately 6,300 feet of new underground pipeline, which would serve as an emergency water supply connection to the Las Virgenes Municipal Water District. These improvements are intended to provide a more reliable water system for customers within the District 29 area. Pipeline segments would be replaced underground in existing roadways in the same location. The crossing repairs would replace or replace pipes hanging under bridges. The tank improvements would occur on the same sites as tanks, subsequent to their demolition.

Construction

Construction activities associated with pipeline improvements, creek-crossing repairs, and tank replacements would not divide an established community substantially, as discussed below.

Pipelines Replacement in PCH

Existing pipelines would be replaced with new pipelines in the same locations in PCH, including the following improvements:

- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)

- PCH and Topanga Beach Drive Waterline Improvements
- Big Rock Bypass Improvements

The improvements within PCH would not divide communities because the high-volume PCH already serves as a division between communities on opposite sides of the roadway. Construction would move down each roadways segment rapidly, only lasting a few days in any one location. The replacement pipelines in PCH would not physically divide an established community, and impacts would be less than significant.

Pipelines Replacement in Other Roadways

Existing pipelines would be replaced with new pipelines in the same locations in other roadways, including the improvements discussed separately below.

Carbon Canyon Road and Carbon Mesa Road Waterline Improvements

This improvement would not divide a community because the roadways where the pipelines would be replaced serve only as access to scatter residences, mostly located behind gates. The full roadway would never be fully closed, allowing access to each property in this sparsely developed area. Construction would move down each roadways segment rapidly, only lasting a few days in any one location. Therefore, the replacement pipelines in Carbon Canyon Road and Carbon Mesa Road would not physically divide an established community, and impacts would be less than significant.

Coastline Drive 12-inch Waterline Improvements

This improvement would not divide a community because of the existing roadway, Coastline Drive, along with the steep topography. The bluff-top multifamily homes on the north side (approximately 20 feet or more above Coastline Drive) are accessed from alleys or frontage roads, not directly from Coastline Drive. The single-family homes are located at street level and below on the southern side of Coastline Drive and oriented to the back (south), where they have views of the Pacific Ocean only 300 to 500 feet away. Therefore, the two sides of the street represent two separate communities, already divided by topography and roadways.

Construction would move along each roadway segment rapidly, with approximately 100 feet of roadway disturbed at any one time. Therefore, the replacement pipelines in Coastline Drive would not physically divide an established community, and impacts would be less than significant.

Emergency Source of Water Supply Connection (Las Virgenes Connection)

The site of this improvement is located on Encinal Canyon Road, which travels through open space with a few access driveways to rural residences. Construction would move down each roadways segment rapidly, only lasting a few days in any one location. The full roadway would never be fully closed, allowing access to each property in this sparsely developed area. Therefore, construction of the new pipeline would not divide an established community, and impacts would be less than significant.

District 29 Creek Crossing Repairs

These repairs would not divide a community because the existing bridges and the creeks they cross already serve as a barrier between communities and because the quick lane closure and repair

(generally just 1 day long) would result in less-than-significant impacts related to physically dividing a community.

Tank Replacements

Fernwood Tank Improvement

The Fernwood Tank Improvement is at the site of an existing District 29 tank, at the end of a dead-end road. Construction may require temporary closure of the road near its terminus for delivery of large equipment and materials, but this potentially would affect only one or two properties for short periods of time. No access across the Fernwood Tank site is open to the public. Therefore, the replacement of Fernwood Tank would not divide an established community, and impacts would be less than significant.

Upper Encinal Tank Improvement

The Fernwood Tank Improvement is at the site of an existing District 29 tank, at the end of a dead-end road, physically and visually separated from the sparse development in the hillsides east of the site. No access across the Upper Encinal Tank site is open to the public. Therefore, the replacement of Upper Encinal Tank would not divide an established community, and impacts would be less than significant.

Operation

Once construction is complete, roadways would be returned to their previous existing conditions, and there would be no change to the existing environment. After construction, the single Fernwood Tank would operate in the same way as the existing two tanks, on the same site, with the same entrance road at the end of a dead-end street. After construction, the Upper Encinal Tank would operate in the same way as the existing tank, on the same site, with the same entrance road at the end of a dead-end street. Operation and maintenance of the improvements would be the same as the existing condition. Therefore, there would be no impacts related to division of communities after construction is complete, and impacts would be less than significant.

Impact LU-XI.b.

Would the project cause a significant environmental impacts 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.

Construction

Construction of the improvements would be required to obtain all necessary permits and comply with all construction regulations and policies in the jurisdictions they are in. Policies related to impact to the environment are addressed throughout this chapter of the EIR. Therefore, impacts would be less than significant.

Operation

Operation and maintenance of the proposed improvements would not conflict with the goals of regional or local plans and policies discussed in Section 3.11.2, *Regulatory Setting*. Most policies relate

to permanent changes to land uses, which none of the improvements would do. Policies related to impact to the environment are addressed throughout this chapter of the EIR. Therefore, impacts would be less than significant.

3.11.3.3 Mitigation Measures

The improvements in the District 29 project would result in less-than-significant impacts to land use. No mitigation measures are required.

3.12 Mineral Resources

This section describes the current mineral resources environmental and regulatory setting, the potential impacts that would result from implementation of the proposed project, and mitigation measures, if necessary.

3.12.1 Environmental Setting

The Malibu area is part of the Simi Production-Consumption (P-C) Region under Surface Mining and Reclamation Act (SMARA) (California Division of Mines and Geology 1981b). A small part of the Malibu area is within the Western Ventura P-C Region. The California Department of Conservation (California DOC) has designated this area a Mineral Resource Zone (MRZ)-3, defined as areas containing mineral deposits, the significance of which cannot be evaluated from available data. (California Division of Mines and Geology 1981a). Sand and gravel resources are the only mineral resources that have been mapped in these P-C regions. To date, the State Division of Mines and Geology has not mapped these resources or other mineral resources in the Malibu area. Given the presence of the numerous incised canyons and drainages, sand and gravel resources are expected to occur in the area (City of Malibu 2017).

3.12.2 Regulatory Setting

3.12.2.1 Federal

There are no federal regulations related to mineral resources applicable to the project.

3.12.2.2 State

Surface Mining Reclamation Act of 1975

In order to promote the conservation of the State's mineral resources and ensure adequate reclamation of mined lands, SMARA was enacted. SMARA requires that a state geologist classify land in California for its mineral resource potential. Local governments are required to incorporate the mineral classification reports and maps into their general plans in order for the resources to be given consideration when making land use decisions.

The California Geological Survey (CGS) provides objective economic-geologic expertise to assist in the protection and development of mineral resources through the land-use planning process, an effort SMARA mandates. The primary products are mineral land classification maps and reports. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions.

3.12.2.3 Local and Regional

There are no local or regional regulations related to mineral resources applicable to the project.

3.12.3 Impacts and Mitigation

3.12.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Contribution to the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Contribution to the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.12.3.2 Impacts

Impact MIN-XII.a.

Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact.

Construction and Operation

There are no known mineral resources in the Malibu and adjacent Los Angeles County area. Therefore, there would be no contribution to the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, and no impact would occur.

Impact MIN-XII.b.

Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact.

Construction and Operation

There are no known mineral resources in the Malibu and adjacent Los Angeles County area. There is no local zoning or general plan designation regarding mineral resource recovery sites. Therefore, there would be no contribution to the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

3.12.4 Mitigation Measures

The improvements in the District 29 project would not result in impacts to mineral resources. No mitigation measures are required.

3.13 Noise

This section describes the potential noise and vibrational impacts of the proposed project. It includes a discussion of existing regulatory requirements, the existing noise setting within the project area, and noise and vibrational impacts that would result from implementation of the proposed project. Supporting technical information and analyses are incorporated by reference and included as Appendix E of this EIR.

3.13.1 Existing Setting

The existing setting for noise describes the existing noise conditions and identifies potential sensitive receptors in the project area.

3.13.1.1 Noise Fundamentals

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is often defined as sound that is objectionable because it is unwanted, disturbing, or annoying.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receptor, determine the sound level and the characteristics of the noise perceived by the receptor.

The following sections provide an explanation of key concepts and acoustical terms used in the analysis of environmental and community noise.

Frequency, Amplitude, and Decibels

Continuous sound can be described by its *frequency* (pitch) and *amplitude* (loudness). A low-frequency sound is perceived as low in pitch; a high-frequency sound is perceived as high-pitched. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source correlates with the loudness of that source. The amplitude of a sound is typically described in terms of *sound pressure level* (SPL), also simply referred to as the *sound level*. The SPL refers to the root-mean-square (rms) pressure of a sound wave and is measured in units called *micropascals* (µPa). One µPa is approximately one hundred-billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to over 100,000,000 µPa. Because of this large range of values, sound is rarely expressed in terms of µPa. Instead, a logarithmic scale is used to describe the sound pressure level in terms of decibels (dB). The decibel is a logarithmic unit that describes the ratio of the actual sound pressure to a reference pressure (20 µPa is the standard reference pressure level for acoustical measurements in air).

Specifically, a sound pressure level, in decibels, is calculated as follows:

$$SPL = 20 \times \log_{10}\left(\frac{X}{20\mu Pa}\right)$$

where *X* is the actual sound pressure and 20 µPa is the reference pressure. The threshold of hearing for young people is about 0 dB, which corresponds to 20 µPa.

Decibel Calculations

Because decibels represent noise levels using a logarithmic scale, sound pressure levels cannot be added, subtracted, or averaged through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one bulldozer produces a sound pressure level of 80 dB, two bulldozers would not produce a combined sound level of 160 dB; they would combine to produce 83 dB. The cumulative sound level of any number of sources, such as excavators, can be determined using decibel addition. The same decibel addition is used for A-weighted decibels, described below.

Similarly, the arithmetic mean (i.e., average) of a series of noise levels does not accurately represent the overall average noise level. Instead, the values must be averaged using a linear scale before converting the result back into a logarithmic (dB) noise level. This method is typically referred to as calculating the *energy average* of the noise levels.

A-Weighting

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (i.e., energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by characteristics of the human ear.

Human hearing is limited in the range of audible frequencies, as well as in the way it perceives the SPH in that range. In general, people are most sensitive to the frequency range of 1,000 to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude at higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted (i.e., adjusted), depending on human sensitivity to those frequencies. The resulting SPL is expressed in A-weighted decibels (dBA).

The A-weighting scale approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted sound levels of those sounds. Table 3.13-1 describes typical A-weighted sound levels for various noise sources.

Noise Descriptors

Because sound levels can vary markedly over a short period of time, various descriptors, or noise metrics, have been developed to quantify environmental and community noise. These metrics generally describe either the average character of the noise or the statistical behavior of the variations in the noise level. Some of the most common metrics used to describe environmental noise, including those metrics used in this report, are described below.

Table 3.13-1. Typical A-Weighted Sound Levels

Common Outdoor Noise Source	Sound Level (dBA)	Common Indoor Noise Source
	– 110 –	Rock band
Jet flying at 1,000 feet		
	– 100 –	
Gas lawn mower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	– 70 –	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	– 60 –	
		Large business office
Quiet urban daytime	– 50 –	Dishwasher in next room
Quiet urban nighttime	– 40 –	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	– 0 –	Lowest threshold of human hearing

Source: California Department of Transportation 2013a.

Equivalent Sound Level

Equivalent sound level (L_{eq}) is the most common metric used to describe short-term average noise levels. Many noise sources produce levels that fluctuate over time; examples include mechanical equipment that cycles on and off or construction work, which can vary sporadically. The L_{eq} describes the average acoustical energy content of noise for an identified period of time, commonly one hour. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustical energy over the duration of the exposure. For many noise sources, the L_{eq} will vary, depending on the time of day. A prime example is traffic noise, which rises and falls depending on the amount of traffic on a given street or freeway.

Maximum Sound Level and Minimum Sound Level

Maximum sound level (L_{max}) and minimum sound level (L_{min}) refer to the maximum and minimum sound levels, respectively, that occur during the noise measurement period. More specifically, they describe the rms sound levels that correspond to the loudest and quietest 1-second intervals that occur during the measurement.

Percentile-Exceeded Sound Level

Percentile-exceeded sound level (L_{xx}) describes the sound level exceeded for a given percentage of a specified period. For example, the L_{50} is the sound level exceeded 50 percent of the time (such as 30 minutes per hour), and L_{25} is the sound level exceeded 25 percent of the time (such as 15 minutes per hour).

Community Noise Equivalent Level

Community noise equivalent level (CNEL) is a measure of the 24-hour average A-weighted noise level that is also time-weighted to "penalize" noise that occurs during the evening and nighttime hours, when noise is generally recognized to be more disturbing (i.e., people are trying to rest, relax, and sleep during these times). Therefore, 5 dBA is added to the L_{eq} during the evening hours of 7 p.m. to 10 p.m., and 10 dBA is added to the L_{eq} during the nighttime hours of 10 p.m. to 7 a.m., and the energy average is then taken for the whole 24-hour day.

Day-Night Sound Level

Day-night sound level (L_{dn}) is very similar to the CNEL described above: L_{dn} is also a time-weighted average of the 24-hour A-weighted noise level. The only difference is that no "penalty" is applied to the evening hours of 7 p.m. to 10 p.m. Ten dBA is added to the L_{eq} during the nighttime hours of 10 p.m. to 7 a.m., and the energy average is then taken for the whole 24-hour day

It is noted that various federal, state, and local agencies have adopted CNEL or L_{dn} as the measure of community noise. While not identical, CNEL and L_{dn} are normally within 1 dBA of each other when measured in typical community environments, and many noise standards/regulations use the two interchangeably.

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise is reduced with distance depends on the following important factors.

Geometric Spreading

Sound from a single source (i.e., a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (drops off) at a rate of 6 dBA for each doubling of distance.

Highway noise is not a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a "line" source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level (i.e., attenuation or decrease) from a line source is 3 dBA per doubling of distance.

Ground Absorption

Usually the noise path between the source and the observer is very close to the ground. The excess noise attenuation from ground absorption occurs due to acoustic energy losses on sound wave reflection. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is done for simplification only; for distances of less than 200 feet, prediction results based upon this scheme are sufficiently accurate. For acoustically "hard" sites (i.e., sites with a reflective surface, such as a parking lot or a smooth body of water, between the source

and the receptor), no excess ground attenuation is assumed because the sound wave is reflected without energy losses. For acoustically absorptive, or "soft," sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.

Atmospheric Effects

Caltrans research has shown that atmospheric conditions can have a major effect on noise levels. Wind has been shown to be the single most important meteorological factor within approximately 500 feet, whereas vertical air temperature gradients are more important over longer distances. Other factors, such as air temperature, humidity, and turbulence, also have major effects. Receptors downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas receptors upwind can have lower noise levels. Increased sound levels can also occur because of temperature inversion conditions (i.e., increasing temperature with elevation, with cooler air near the surface, where the sound source tends to be located and the warmer air above acts as a cap, causing a reflection of ground level–generated sound).

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receptor can attenuate noise levels at the receptor substantially. The amount of attenuation provided by this shielding depends on the size of the object, its proximity to the noise source and receptor, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can reduce noise levels significantly: Walls are often constructed between a source and a receptor for the specific purpose of reducing noise. A barrier that breaks the line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction; a higher barrier may provide as much as 20 dB of noise reduction.

Human Response to Noise

Noise can have a range of effects on people including hearing damage, sleep interference, speech interference, performance interference, physiological responses, and annoyance. Each of these effects is described briefly below.

Hearing Damage

A person exposed to high noise levels can suffer hearing damage, either gradual or traumatic. Gradual hearing loss occurs with repeated exposure to excessive noise levels and is most commonly associated with occupational noise exposures in heavy-industry or other very noisy work environments. Traumatic hearing loss is caused by sudden exposure to an extremely high noise level, such as a gunshot or explosion at very close range. The potential for noise-induced hearing loss is not generally a concern in typical community noise environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud as to cause hearing loss.

Sleep Interference

Exposure to excessive noise levels at night has been shown to cause sleep disturbance, which refers not only to awakening from sleep, but also to effects on the quality of sleep, such as altering the pattern

and stages of sleep. Interior noise levels between 50 and 55 dBA L_{max} during nighttime hours (10 p.m. to 7 a.m.) were found to result in sleep disturbance and annoyance (Nelson 1987).

Speech Interference

Speech interference can be a problem in any situation in which clear communication is desired, but is often of particular concern in learning environments (e.g., schools) or situations in which poor communication could jeopardize safety. Normal conversational speech is in the range of 60 to 65 dBA; thus, any noise in this range or louder may interfere with speech. As background noise levels rise, the intelligibility of speech decreases, and the listener will fail to recognize an increasing percentage of the words spoken. A speaker may raise his or her voice in an attempt to compensate for higher background noise levels, but this in turn can lead to vocal fatigue for the speaker.

Performance Interference

Excessive noise has been found to have various detrimental effects on human performance, including information processing, concentration, accuracy, reaction times, and academic performance. Intrusive noise from individual events can also cause distraction. These effects are of obvious concern for learning and work environments.

Physiological Responses

Noise has been shown to cause measurable physiological responses in humans, including changes in stress hormone levels, pulse rate, and blood pressure. The extent to which these responses cause harm or signs of harm is not clearly defined, but they could contribute to stress-related diseases, such as hypertension, anxiety, and heart disease.

Annoyance

The subjective effects of annoyance, nuisance, and dissatisfaction can be the most difficult to quantify, and no completely satisfactory method exists to measure them. This difficulty arises primarily from differences in individual sensitivity and habituation to sound, which can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing acuity. An important tool in estimating the likelihood of annoyance due to a new sound is comparing it to the existing baseline (i.e., ambient) environment to which that person has adapted. In general, the more the level or tonal (frequency) variations of a sound exceed the previously existing ambient sound level or tonal quality, the less acceptable the new sound will be.

In most cases, effects from sounds typically found in the natural environment would be limited to annoyance or interference. Physiological effects and hearing loss would be more commonly associated with manmade noise, such as in an industrial or occupational setting.

Studies have shown that under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of 1 dBA. In a normal environment, the healthy human ear can detect changes of about 2 dBA; however, it is widely accepted that a doubling of sound energy, which results in a change of 3 dBA in the normal environment, is considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) resulting in a 3 dBA increase in sound would generally be barely detectable.

Noise-Sensitive Land Uses

Noise-sensitive land uses are the locations most likely to be affected adversely by excessive noise levels. As defined by the General Plan Noise Elements of the City of Malibu (1995) and the County of Los Angeles (2009), these uses include single and multiple-family residences, schools, libraries, medical facilities, childcare facilities, retirement/rest homes, and places of assembly and worship.

3.13.1.2 Groundborne Vibration Fundamentals

This section describes basic concepts related to groundborne vibration, a small, rapidly fluctuating motion transmitted through the ground. The effects of groundborne vibrations typically are limited to causing nuisance or annoyance to people, but at extreme vibration levels, damage to buildings may also occur.

In contrast to airborne sound, groundborne vibration is not a phenomenon that most people experience every day. The ambient groundborne vibration level in residential areas usually is much lower than the threshold of human perception. Most perceptible indoor vibration is caused by sources within buildings, such as mechanical equipment in operation, people moving, or doors slamming. Typical outdoor sources of perceptible groundborne vibration are heavy construction activity (e.g., blasting, pile driving, or earthmoving), steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic rarely is perceptible, even in locations close to major roads. The strength of groundborne vibration from typical environmental sources diminishes (i.e., attenuates) fairly rapidly over distance.

For the prediction of groundborne vibration, the fundamental model consists of a vibration source, a receptor, and the propagation path between the two. The power of the vibration source and the characteristics and geology of the intervening ground, which affect the propagation path to the receptor, determine the groundborne vibration level and the characteristics of the vibration perceived by the receptor.

The following sections provide an explanation of key concepts and terms used in the analysis of environmental groundborne vibration.

Displacement, Velocity, and Acceleration

Vibration sources (e.g., blasting, dynamic construction equipment, trains) impart energy to the ground, creating vibration waves that propagate away from the source along the surface and downward into the earth. As vibration waves travel outward from a source, they excite the particles of rock and soil through which they s and cause them to oscillate. The distance that these particles move is referred to as *displacement* and is typically very small, usually only a few ten-thousandths to a thousandths of an inch. *Velocity* describes the instantaneous speed of the motion, and *acceleration* is the instantaneous rate of change of the speed. Each of these measures can be further described in terms of *frequency* and *amplitude*, as discussed below.

Although displacement is generally easier to understand than velocity or acceleration, it is used rarely to describe groundborne vibration because most transducers used to measure vibration directly measure velocity or acceleration, not displacement.

Frequency and Amplitude

The *frequency* of a vibrating object describes how rapidly it is oscillating. The unit of measurement for the frequency of vibration is Hz (the same as used in the measurement of noise), which describes the number of cycles per second.

The *amplitude* of displacement describes the distance that a particle moves from its resting (i.e., equilibrium) position as it oscillates and can be measured in inches. The amplitude of vibration velocity (i.e., the speed of the movement) can be measured in inches per second (in/sec). The amplitude of vibration acceleration (i.e., the rate of change of the speed) can be measured in in/sec squared.

Vibration Descriptors

As noted above, there are various ways to quantify groundborne vibration based upon its fundamental characteristics. Because vibration can vary markedly over a short period of time, various descriptors have been developed to quantify vibration, the two most common of which are peak particle velocity and vibration velocity level, each of which are described below.

Peak Particle Velocity

Peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. The unit of measurement for PPV is in/sec. Unlike many quantities used in the study of environmental acoustics, PPV typically is presented using linear values and does not employ a dB scale. Since it is related to the stresses experienced by buildings, PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage; Federal Transit Administration and Caltrans guidelines both recommend using PPV for this purpose. It is also used in many instances to evaluate the human response to groundborne vibration; Caltrans guidelines recommend using PPV for this purpose.

Vibration Velocity Level

Vibratory velocity level (L_v) describes the rms vibration velocity. Due to the typically small amplitudes of groundborne vibrations, vibration velocity is often expressed in decibels, calculated as follows:

$$L_V = 20 \times \log_{10}\left(\frac{V}{V_{ref}}\right)$$

where V is the actual rms velocity amplitude and V_{ref} is the reference velocity amplitude. It is important to note that there is no universally accepted value for V_{ref}, but the accepted reference quantity for vibration velocity in the United States is 1 micro-inch per second (1×10^{-6} inches/second). The abbreviation VdB is commonly used when referring for vibration decibels to distinguish them from noise level decibels. L_V is often used to evaluate human response to vibration levels; Federal Transit Administration guidelines recommend using L_V for this purpose.

Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. The propagation of groundborne vibration is not as simple to model as airborne noise because noise

in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences.

Geological factors that influence the propagation of groundborne vibration include the following:

- **Soil conditions.** The type of soil is known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil. Hard, dense, and compacted soil, stiff clay soil, and hard rock transmit vibration more efficiently than loose, soft soils, sand, or gravel.
- **Depth to bedrock.** Shallow depth to bedrock has been linked to efficient propagation of groundborne vibration. One possibility is that shallow bedrock acts to concentrate the vibration energy near the surface, reflecting vibration waves back toward the surface that would otherwise continue to propagate farther down into the earth.
- **Soil strata.** Discontinuities in the soil strata (i.e., soil layering) can also cause diffractions or channeling effects that affect the propagation of vibration over long distances.
- **Frost conditions.** Vibration waves typically propagate more efficiently in frozen soils than in unfrozen soils. Propagation also varies depending on the depth of the frost.
- **Water conditions.** The amount of water in the soil can affect vibration propagation. The depth of the water table in the path of the propagation also appears to have substantial effects on groundborne vibration levels.

Specific conditions at the source and receiver locations can also affect the vibration levels. For instance, how the source is connected to the ground (e.g., direct contact, through rails, or via a structure) will affect the amount of energy transmitted into the ground. There are also notable differences when the source is underground (e.g., tunnels) versus on the surface. At the receiver, vibration levels can be affected by variables such as the foundation type, the building construction, and the acoustical absorption inside the rooms where people are located. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

Effects of Groundborne Vibration

Vibration can result in effects that range from annoyance to structural damage. Annoyance or disturbance of people may occur at vibration levels substantially below those that would pose a risk of damage to buildings. Each of these effects is discussed below.

Human Disturbance or Annoyance

Groundborne vibration can be annoying to people and cause serious concern for close neighbors of vibration sources, even when vibration is well below levels that could cause physical damage to structures. Groundborne vibration is almost exclusively a concern inside buildings and rarely perceived as a problem outdoors, where the motion may be discernible, but does not have as great an adverse reaction without the effects associated with a building shaking. The normal frequency range of most groundborne vibration that can be felt generally starts from a low of less than 1 Hz to a high of about 200 Hz.

Potential Building Damage

When groundborne vibration encounters a building, vibrational energy is transmitted to the structure, causing it to vibrate; if the vibration levels are high enough, damage to the building may occur. Depending on the type of building and the vibration levels, this damage could range from cosmetic architectural damage (e.g., cracked plaster, stucco, or tile) to more severe structural damage (e.g., cracking of floor slabs, foundations, columns, beams, or wells).

Buildings can typically withstand higher levels of vibration from transient sources than from continuous or frequent intermittent sources. Transient sources are those that create a single, isolated vibration event (i.e., blasting or drop balls); continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. Older, fragile buildings, which may include important historical buildings, are of particular concern in that modern commercial and industrial buildings can generally withstand much higher vibration levels before potential damage becomes a problem.

When groundborne vibration waves encounter a building, vibrational energy is transmitted to the building foundation, and then propagates throughout the remainder of the structure, causing building surfaces (i.e., walls, floors, and ceilings) to vibrate. This movement may be felt directly by building occupants and may also generate a low-frequency rumbling noise as sound waves are radiated by the vibrating surfaces. At higher frequencies, building vibration can cause other audible effects (e.g., rattling of windows, building fixtures, or items on shelves or hanging on walls), referred to as *groundborne noise*. Groundborne vibration levels that result in groundborne noise are often experienced as a combination of perceptible vibration and low-frequency noise. However, sources that have the potential to generate groundborne noise are also likely to produce airborne noise effects that mask the radiated groundborne noise.

Any perceptible effect (i.e., vibration or groundborne noise) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping or reading will be more sensitive than someone who is engaged in most types of physical activity. Reoccurring vibration effects often lead people to believe that the vibration is damaging their home, even though vibration levels are well below minimum thresholds for damage potential (Caltrans 2013).

Numerous studies have been conducted to characterize the human response to vibration and, over the years, researchers, organizations, and governmental agencies have created myriad vibration criteria and standards. These studies suggest that the thresholds for perception and annoyance vary according to duration, frequency, and amplitude of vibration. For transient vibration sources (i.e., single, isolated vibration events such as blasting), the human response to vibration varies from barely perceptible at a PPV of 0.04 in/sec, to distinctly perceptible at a PPV of 0.25 in/sec, and severe at a PPV of 2.0 in/sec. For continuous or frequent intermittent vibration sources (e.g., impact pile driving or vibratory compaction equipment), the human response to vibration varies from barely perceptible at a PPV of 0.01 in/sec, to distinctly perceptible at a PPV of 0.04 in/sec, and severe at a PPV of 0.4 in/sec (Caltrans 2013).

Vibration Sensitive Land Uses

The potential effects of groundborne vibration can be divided into two categories: building damage and potential human annoyance. Because building damage would be considered a permanent negative effect to any building, regardless of land use, any type of building typically would be considered sensitive to groundborne vibration. Fragile structures, which often include historical

buildings, are most susceptible to damage and are of particular concern. Human annoyance effects from groundborne vibration are typically only considered inside occupied buildings and not at outside areas, such as residential yards, parks, or open space.

Buildings that would be considered sensitive for human annoyance caused by vibration are generally the same as those that would be sensitive to noise. While the City of Malibu and the County of Los Angeles General Plan Noise Element do not identify specific vibration-sensitive land uses, noise-sensitive land uses are defined to include single and multiple-family residences, schools, libraries, medical facilities, childcare facilities, retirement/rest homes, and places of assembly and worship. Additional detail regarding local regulations is provided in Section 3.13.2.3, *Regional and Local*.

3.13.1.3 Existing Noise Sources

The proposed project area encompasses District 29's service area in southwestern Los Angeles County, which consists of the City of Malibu and the unincorporated area of Topanga. The project area is generally sparsely populated, with development concentrated along the coastal areas in Malibu and in the small communities in its unincorporated areas. In Malibu, the chief source of noise is roadway traffic on Pacific Coast Highway (PCH), which borders the entire city on the south. Additional roadway traffic noise is created on major canyon roads that traverse the mountains in a north-south direction, such as Malibu Canyon Road and Kanan Dume Road. In Topanga, the dominant source of noise is traffic on PCH east of Malibu and northbound/southbound Topanga Canyon Boulevard. Other noise sources currently affecting the proposed project area include intermittent aircraft overflights, residential-generated noise (e.g., vehicle operation, landscaping activities, etc.), and natural background noise (e.g., wind and birds).

In order to quantify the existing ambient noise conditions in the proposed project area, which consists of areas in Malibu and in unincorporated areas of Topanga where water system improvements would occur, noise monitoring was conducted at nine locations within the project area between April 1 and April 3, 2019. Long-term noise monitoring was conducted at two locations, designated LT1 and LT2, and short-term noise monitoring was conducted at seven locations, designated ST1 through ST7. All measurement locations are indicated on Figure 3.13-1, Noise Measurement Locations. Long-term measurements were conducted over a 24-hour period using Type 2 sound level meters.[1] The short-term measurements were conducted over a period of 20 minutes using a Type 1 sound level meter.[2] All sound level meters were field-calibrated prior to each measurement to ensure accuracy, using a Larson Davis CAL200 acoustical calibrator; the calibration was also rechecked at the conclusion of each measurement. The measurement results are summarized in Table 3.13-2 and included in Appendix E.

[1] Model Piccolo SLM-P3 manufactured by Soft dB. Type 2 sound level meters are considered general-purpose grade for field use.

[2] Model 831 manufactured by Larson Davis. Type 1 sound level meters are considered precision grade.

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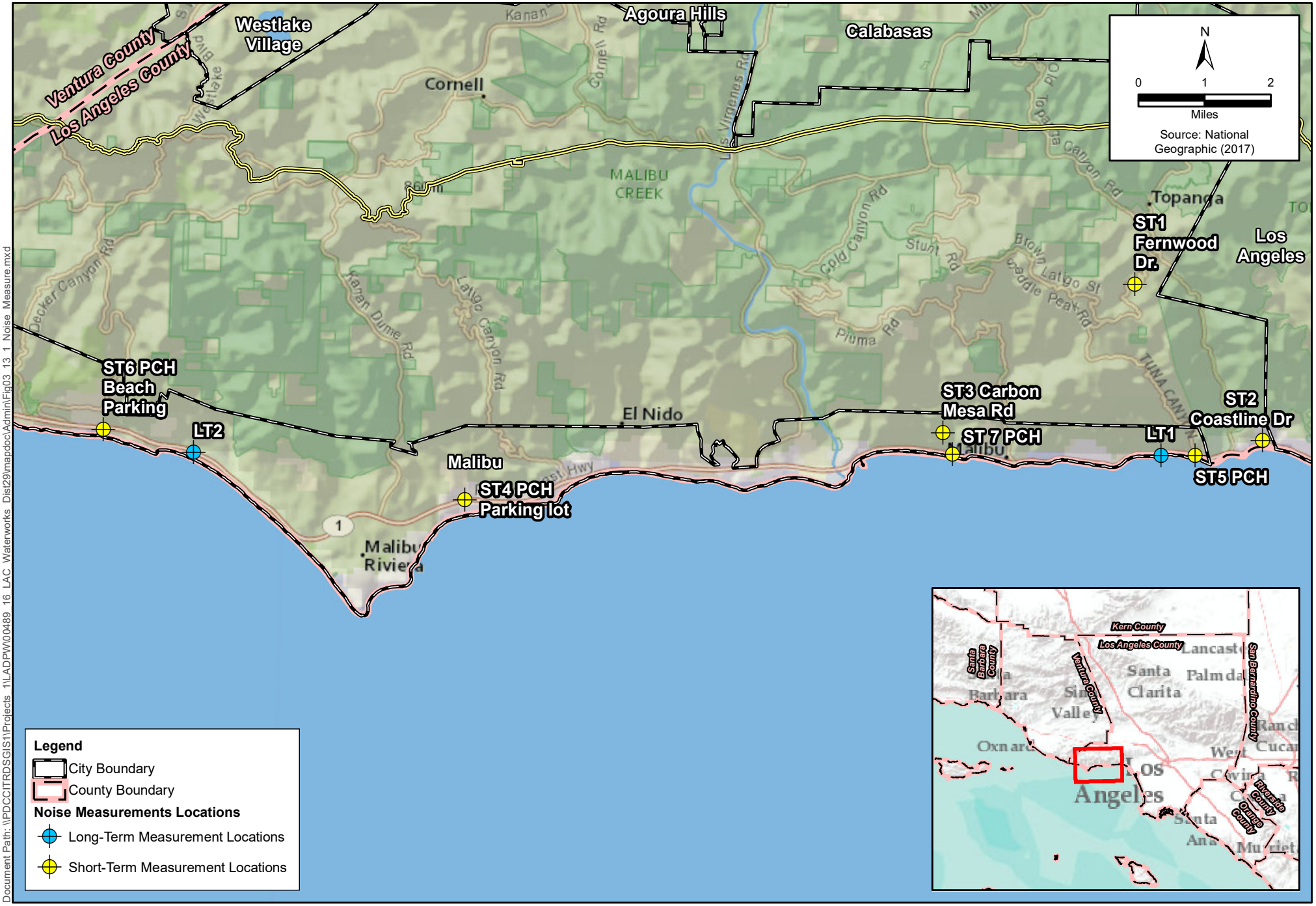

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Figure 3.13-1
Noise Measurements Locations
Los Angeles County Waterworks District 29 - Priority Capital Deficiencies Improvements

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Table 3.13-2. Summary of Noise Measurement Results

Site#	Location	Jurisdiction	Date	Time of Day	Range of Hourly L_{eq} Values (Average), dBA
LT1	Lifeguard booth area at 19444 PCH	City of Malibu	4/1/19–4/3/19	Daytime (7 a.m.–10 p.m.) Nighttime (10 p.m.–7 a.m.)	71.9–75.9 (73.9) 64.4–76.0 (71.0)
LT2	Area located off of the southern shoulder of PCH, west of Lunita Road	City of Malibu	4/1/19–4/3/19	Daytime (7 a.m.–10 p.m.) Nighttime (10 p.m.–7 a.m.)	70.3–77.7 (75.8) 61.7–77.5 (70.7)
ST1	Open space south of intersection of Fernwood Pacific Drive and Bainum Drive	Los Angeles County	4/1/19	12:33 p.m.–12:53 p.m.	43.5
ST2	Multi-family residential driveway at 18125 Coastline Drive	Los Angeles County	4/3/19	2:24 p.m.–2:44 p.m.	56.3
ST3	Open area east of Carbon Mesa Road and across from single-family residence	City of Malibu	4/1/19	1:40 p.m.–2:00 p.m.	44.7
ST4	Surface parking lot at the northeast corner of the intersection of PCH and Winding Way	City of Malibu	4/1/19	11:18 a.m.–11:38 a.m.	59.0
ST5	North side of PCH, across from residence at 18936 PCH	City of Malibu	4/3/19	1:37 p.m.–1:57 p.m.	69.7
ST6	Beach parking area located at the southeast corner of the intersection of PCH and El Matador Beach Road	City of Malibu	4/1/19	10:27 a.m.–10:47 a.m.	67.8
ST7	North side of PCH, across from residence at 21934 PCH	City of Malibu	4/1/19	12:57 p.m.–1:17 p.m.	70.7

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3.13.2 Regulatory Setting

3.13.2.1 Federal

There are no federal noise or vibration regulations that directly apply to the proposed project.

3.13.2.2 State

There are no state community noise level standards that affect water facilities construction or operation. However, California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The purpose of the noise element is to limit the exposure of the community to excessive noise levels, and the noise element must be used to guide decisions concerning land use. California provides support and encouragement for cities to enact noise ordinances as required by the California Noise Control Act (California Health and Safety Code Section 46000–46080), and noise is addressed in the ordinances of individual local cities or counties. The proposed project lies within the jurisdiction of the City of Malibu and the County of Los Angeles. Both entities have established policies and regulations concerning the generation and control of noise that could adversely affect citizens and noise- and vibration-sensitive land uses. Summaries of the relevant content found in each jurisdiction's noise element and ordinances are discussed below in Section 3.13.2, *Local and Regional*.

California Department of Transportation

None of the local laws and regulations discussed below provide any quantitative criteria regarding groundborne noise and vibration. Therefore, while the proposed project would not be subject to Caltrans oversight, guidance published by the agency nonetheless provides groundborne vibration criteria that are useful in establishing thresholds of impact. Caltrans' widely referenced *Transportation and Construction Vibration Guidance Manual* (Caltrans 2013) provides guidance for two types of potential impact: (1) damage to structures, and (2) annoyance to people. Guideline criteria for each are provided in Tables 3.13-3 and 3.13-4.

Table 3.13-3. Caltrans Guideline Vibration Damage Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans 2013

Table 3.13-4. Caltrans Guideline Vibration Annoyance Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans 2013

3.13.2.3 Local and Regional

The proposed project area is located within areas of the County of Los Angeles and the City of Malibu. Both entities have established policies and regulations concerning the generation and control of noise that could adversely affect citizens and noise- and vibration-sensitive land uses.

County of Los Angeles General Plan

The County of Los Angeles General Plan Noise Element contains various policies to address countywide noise issues. The following are relevant to the proposed project:

- **Policy N 1.3:** Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through best available technologies (BAT).
- **Policy N 1.6:** Ensure cumulative impacts related to noise do not exceed health-based safety margins.

County of Los Angeles Noise Ordinance (County Code)

Chapter 12.08, *Noise Control*, of the County of Los Angeles Municipal Code serves as the Noise Ordinance for the County unincorporated areas and establishes noise standards to control unnecessary, excessive, and annoying noise and vibration in the County. Within Chapter 12.08 of the Los Angeles County Code, Section 12.08.380 assigns the following noise zones for receptor properties in the County:

I. Noise Zone 1: Noise-sensitive areas

II. Noise Zone 2: Residential properties

III. Noise Zone 3: Commercial properties

IV. Noise Zone 4: Industrial properties

With respect to operational noise, Section 12.08.390 of the Noise Ordinance establishes exterior noise levels that should be applied to all receptor properties within a designated noise zone in the County, as shown in Table 3.13-5.

Table 3.13-5. County of Los Angeles Exterior Noise Standards by Noise Zones

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dBA)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 p.m.–7:00 a.m. 7:00 a.m.–10:00 p.m. (daytime)	45 50
III	Commercial properties	10:00 p.m.–7:00 a.m. (nighttime) 7:00 a.m.–10:00 p.m. (daytime)	55 60
IV	Industrial properties	Anytime	70

Source: Section 12.08.390 of the Los Angeles County Code (a portion of the Noise Control Ordinance)

The exterior noise levels shown in Table 3.13-5 are meant to be further applied as noise standards based upon the duration of the noise (i.e., the louder the noise, the shorter the time it can last). The Noise Ordinance uses a number of noise metrics to define the permissible noise levels, including L_{50}, L_{25}, $L_{8.3}$, $L_{1.7}$, and L_{max} (i.e., L_0), and are based upon a 1-hour timeframe that indicates exceedances of 50, 25, 8.3, and 1.7 percent of the time, plus the maximum sound level during that time period. The following noise standards from Section 12.08.390(B) of the County Municipal Code are applied to the exterior noise levels provided in Table 3.13-5:

- **Standard No. 1**: The allowable exterior noise level (listed in Table 3.13-5) may not be exceeded for a cumulative period of more than 30 minutes in any hour. If the ambient L_{50} exceeds the allowable exterior noise level (listed in Table 3.13-5), then the ambient L_{50} becomes the exterior noise level for Standard No. 1.
- **Standard No. 2**: The exterior noise level may not be exceeded for a cumulative period of more than 15 minutes in any hour is the applicable noise level from Table 3.13-5 plus 5 dB(A); or, if the ambient L_{25} exceeds the applicable noise level in Table 3.13-5, then the ambient L_{25} becomes the exterior noise level Standard No. 2.
- **Standard No. 3**: The exterior noise level may not be exceeded for a cumulative period of more than 5 minutes in any hour is the applicable noise level from Table 3.13-5 plus 20 dB(A); or, if the ambient $L_{8.3}$ exceeds the applicable noise level from Table 3.13-5, then the ambient $L_{8.3}$ becomes the exterior noise level Standard No. 3.
- **Standard No. 4**: The exterior noise level may not be exceeded for a cumulative period of more than one minute in any hour is the applicable noise level from Table 3.13-5 plus 15 dB(A); or, if the ambient $L_{1.7}$ exceeds the applicable noise level from Table 3.13-5, then the ambient $L_{1.7}$ becomes the exterior noise level Standard No. 4.
- **Standard No. 5**: The exterior noise level may not be exceeded for any period of time is the applicable noise level from Table 3.13-5 plus 20 dB(A); or, if the ambient L_0 exceeds the applicable noise level from Table 3.7-7, then the ambient L_0 becomes the exterior noise level for Standard No. 5.

With respect to construction noise in the County, Section 12.08.440 of the Noise Ordinance prohibits the operation of any tools or equipment used between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, that will create a noise disturbance across a residential or commercial real-property line. The only exceptions would be for emergency work of public service utilities or by variance issued by the health officer, or as discussed below. Additionally, both the

working hours and maximum levels of equipment and activity noise that are allowable from both mobile and stationary equipment in the County are defined by land use and shown in Table 3.13-6.

Table 3.13-6. County of Los Angeles Construction Noise Standards

Allowable Work Dates & Hours	Residential Structures					
	Single-Family		Multi-Family		Semi-Residential/ Commercial	
	Mobile Equipment [a]	Stationary Equipment [b]	Mobile Equipment [a]	Stationary Equipment [b]	Mobile Equipment [a]	Stationary Equipment [b]
Daily 7:00 a.m.– 8:00 p.m.[c]	75 dBA	60 dBA	80 dBA	65 dBA	85 dBA	70 dBA
Daily 8:00 p.m.– 7:00 a.m.[d]	60 dBA	50 dBA	64 dBA	55 dBA	70 dBA	60 dBA
	Business Structures					
Daily [d]	85 dBA					

Notes:
[a] Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days)
[b] Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days)
[c] Exception for Sundays and legal holidays
[d] Includes all day Sunday and legal holidays
Source: Section 12.08.440 of the Los Angeles County Code (a portion of the Noise Control Ordinance)

The County has also established a vibration threshold in Section 12.08.560 of the County Noise Ordinance, which states:

> Operating or permitting the operation of any device that creates vibration above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way (ROW) is prohibited. The perception threshold shall be a motion velocity of 0.01 inch/second over the range of 1 to 100 Hertz.

Furthermore, the County Noise Ordinance identifies certain activities that would be exempt from the noise restrictions established by the County. One of these activities, which is relevant to the proposed project, would be Public Health and Safety Activities, as defined under Section 12.08.570(H) of the County Noise Ordinance. The County of Los Angeles (1978) defines these activities as:

> All transportation, flood control, and utility company maintenance and construction operations at any time on public right-of-way, and those situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well-being, including but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, snow removal, house moving, vacuuming catch basins, removal of damaged poles and vehicles, repair of water hydrants and mains, gas lines, oil lines, sewers, etc.

City of Malibu General Plan

The City of Malibu General Plan Noise Element establishes standards for exterior sound levels based upon land use categories. The Noise Element states that the maximum acceptable outdoor noise exposure level for residential is 75 dBA and 85 dBA for commercial and institutional during daytime hours. Table 3.13-7 summarizes the City's maximum exterior noise limits (City of Malibu 1995).

Policies and implementation measures incorporated within the City's General Plan Noise Element that are relevant to the proposed project include:

- **N Policy 1.1.1:** The City shall protect residences, parks and recreational areas from excessive noise to permit the enjoyment of activities.
- **N Policy 1.1.2:** The City shall protect noise sensitive land uses from negative impacts of proximity to noise generating uses.
- **N Policy 1.1.3:** The City shall reduce noise along PCH.
- **N Policy 1.1.6:** The City shall review proposed development to ensure the average ambient noise is as low as feasible to maintain the rural atmosphere.
- **N Implementation Measure 2:** Limit maximum permissible noise levels from all sources, including but not limited to filming, motorized vehicles, construction, leaf blowers and other landscaping equipment.
- **N Implementation Measure 5:** Restrict the hours and days of construction, grading, and filming to reduce noise from this source.

Table 3.13-7. City of Malibu Maximum Exterior Noise Limits, Non-Transportation Sources

Receiving Land Use Category	General Plan Land Use Districts	Time Periods	Noise Level (dBA)	
			L_{eq}	L_{max}
Rural	RR (Rural Residential) zones PRF (Private Recreational Facilities) CR (Commercial Recreation) AH (Agriculture-Horticulture) OS (Open Space)	7 a.m.–7 p.m.	55	75
		7 p.m.–10 p.m.	50	65
		10 p.m.–7 a.m.	40	55
Other Residential	SFR (Single-family Residential) MFR (Multi-family Residential) MFBF (Multi-family Beachfront)	7 a.m.–7 p.m.	55	75
		7 p.m.–10 p.m.	50	65
		10 p.m.–7 a.m.	45	60
Commercial, Institutional	CN (Commercial Neighborhood) CC (Community Commercial) CV (Commercial Visitor) CG (Commercial General) I (Institutional)	7 a.m.–7 p.m.	65	85
		7 p.m.–7 a.m.	60	70

Source: City of Malibu (1995)

City of Malibu Noise Ordinance (Municipal Code)

Chapter 8.24, *Noise*, of the City of Malibu Municipal Code, serves as the Noise Ordinance for the City and establishes noise standards to control unnecessary, excessive, and annoying noise and vibration in the city. The noise restrictions established in the City's Noise Ordinance that are relevant to the proposed project are described below.

Construction Noise

The City of Malibu Noise Ordinance states under Section 8.24.050, *Prohibited Acts*:

> Notwithstanding any other provisions of this chapter, the following acts and the causing or permitting thereof, are declared to be in violation of this chapter:

G. **Construction.** Operating or causing the operation of any tools, equipment, impact devices, derricks, or hoists used in construction, chilling, repair, alteration, demolition, or earthwork on weekdays between the hours of 7 p.m. and 7 a.m., before 8 a.m. or after 5 p.m. on Saturday, or at any time on Sundays or holidays, except as provided in Section 8.24.060(D).

Section 8.24.060, *Exemptions*, states which acts are exempt from the Noise Ordinance:

D. **Construction—Special Circumstances**. The provisions of Section 8.24.050 do not apply to any person who performs construction, repair, excavation, or earthmoving work pursuant to the expressed written permission of the city manager to perform such work at times prohibited in Section 8.24.050. The applicant must submit to the city manager an application in writing, stating the reasons for the request and the facts upon which such reasons are based. The city manager may grant written permission for the construction if he or she finds that:

1. The work proposed to be done is in the public interest, and
2. Hardship, injustice, or unreasonable delay would result from the interruption thereof during the hours and days specified in Section 8.24.050, or
3. The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense.

3.13.3 Impacts and Mitigation

3.13.3.1 Methods

Construction Noise and Vibration

Potential noise and vibrational impacts associated with proposed project construction activities were evaluated based upon the type of construction work that would be conducted, construction equipment that would be used, and their location relative to nearby sensitive receptors. The proposed project would include nine components: two tank replacements and seven waterline replacements and installations. As such, an analysis was conducted for these two general types of construction activities that would occur under the proposed project.

Construction-related noise was analyzed using data and modeling methodologies from FHWA's Roadway Construction Noise Model (RCNM) (FHWA 2008), which predicts average noise levels at nearby receptors by analyzing the type of equipment, the distance from source to receptor, and usage factor (i.e., the percentage of time the equipment is operating in its noisiest mode while in use). This methodology calculates the composite average noise levels for multiple pieces of equipment scheduled to operate concurrently during construction. Consistent with the RCNM methodology, it was assumed that construction noise levels would be reduced at a rate of 6 dB per doubling of distance from the source and that no shielding (in the form of property line barriers or berms) was included. This is considered to be a conservative assumption because it represents uninterrupted noise propagation across acoustical hard surfaces (e.g., pavement). In reality, there likely will be some noise reduction effects due to shielding by walls, fences, buildings, and other objects, especially at larger distances from the construction sites, that will reduce noise levels.

The construction equipment inventory for each of the proposed project's nine components and the noise levels associated with each piece of equipment at a reference distance of 50 feet are provided in Table 3.13-8. Based upon the amount of equipment that would be expected to operate concurrently on a given construction day for the two general types of construction activities (i.e., tank replacement and waterline replacement/installation), the hourly average construction noise levels for the

proposed project's construction activities were estimated at a reference distance of 50 feet. Details of the construction noise analyses are provided in Appendix E.

Construction-related vibration was analyzed using data and modeling methodologies provided by Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2013). This guidance manual provides typical vibration source levels for various types of construction equipment, as well as methods for estimating the propagation of groundborne vibration over distance. The construction work associated with the proposed project would not require high-impact construction methods, such as pile driving or blasting. Therefore, the highest groundborne vibration levels would be associated with conventional heavy construction equipment, such as bulldozers, backhoes, and loaders, which are analyzed as continuous/frequent intermittent vibration sources under Caltrans vibration criteria. According to Caltrans data, the largest generally available models of each of these heavy pieces of equipment can generate a PPV of 0.089 in/sec at a reference distance of 25 feet.

Table 3.13-8. Construction Equipment List and Noise Levels

Project Improvement	Construction Equipment[a]	Individual Equipment Noise Levels (dBA) at 50 Feet	
		L_{eq}	L_{max}
• Carbon Canyon Road and Carbon Mesa Road Waterline Improvements • Coastline Drive 12-Inch Waterline Improvement • Fernwood Tank Improvement • PCH and Topanga Beach Drive Waterline Improvements • Emergency Source of Water Supply Connection (Las Virgenes Connection) • Big Rock Bypass Improvements • Upper Encinal Tank Improvement	Excavator	77	81
	Loader	75	79
	Dozer	78	82
	Backhoe	74	78
	Dump Truck	73	77
	Pickup Truck	71	75
	Grader	81	85
	Crane	73	81
	Generator	78	81
	Compressor	74	78
	Welder	70	74
	Concrete Truck	75	79
	Roller	73	80
• District 29 Creek Crossing Repair • PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	Excavator	77	81
	Loader	75	79
	Dozer	78	82
	Backhoe	74	78
	Dump Truck	73	77
	Pickup Truck	71	75
	Flat Bed Truck	70	74
	Generator	78	81
	Compressor	74	78
	Welder	70	74
	Concrete Truck	75	79
	Roller	73	80

Notes:

[a] The equipment listed represents the equipment inventory that would be used during the construction period for each of the corresponding proposed project components.
Source: Federal Highway Administration (2008)

The following equation from the guidance manual was used to estimate the change in PPV levels over distance:

$$PPV_{rec} = PPV_{ref} \times (25/D)^{n}$$

where PPV_{rec} is the PPV at a receptor; PPV_{ref} is the reference PPV at 25 feet from the equipment (0.089 in/sec); D is the distance from the equipment to the receiver, in feet; and n is a value related to the vibration attenuation rate through ground (the default recommended value for n is 1.1). This methodology was used to estimate the impact distances for various construction equipment items relative to thresholds for potential damage to various building categories,[3] as well as the County's threshold for human disturbance.

Operation

After construction is complete, the two new replacement water tanks and the new and replaced waterline pipes would not result in any new noise or vibration sources. The new water tanks in the unincorporated area of Topanga and Malibu would replace the existing aging tanks at these two locations, and although they both would have larger capacities than the existing tanks, their operations generally do not emit noticeable noise or vibration levels. The new and replaced waterline pipes would be located underground and thus would not generate perceptible levels of noise or vibration. As a water system improvement project, the proposed project would also not permanently alter noise from surrounding roadways. For these reasons, no quantitative analysis of operational noise of vibration has been conducted, and no mitigation of operation noise levels is required.

3.13.3.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Generation of increased ambient noise levels in the project vicinity in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels.

[3] The building categories are based upon the structural characteristics of the buildings, ranging from extremely fragile historic buildings to modern industrial/commercial buildings (refer to Table 3.13-3).

3.13.3.3 Impacts

Impact NOI-XIII.a.

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?

Significant and Unavoidable.

Construction

Under the proposed project, improvements to the existing water system infrastructure would be made within District 29's service area. The proposed project would include nine improvement components: two tank replacements and seven waterline replacements/installations. Specifically, the proposed improvements would include the demolition of two 50,000-gallon water tanks and construction of one tank reservoir in the unincorporated area of Topanga and demolition of one 70,000-gallon water tank and construction of one 225,000-gallon tank reservoir in Malibu; replacement of approximately 34,300 feet of existing underground water pipeline, 19,000 feet of which are along PCH; construction of approximately 6,300 feet of new underground pipeline; and repairing several creek-crossing locations by replacing and recoating segments of pipe and air release valves on PCH.

The construction equipment inventory for each of the proposed project's nine improvements is presented in Table 3.13-8. It should be noted that although each piece of equipment would be used at certain times over the entire construction duration for each of the proposed project's nine improvements, not all of the equipment listed for each improvement would be operating concurrently during a construction day. For the seven waterline replacement/installation improvements, LACDPW anticipates that approximately 100 feet of pipeline on the public road ROW would be replaced/installed per day. As such, given the relatively small construction area that would be worked on a daily basis, construction noise levels associated with the seven waterline replacement/installation improvements were estimated by assuming that the two loudest equipment from their respective equipment inventory list (Table 3.13-8) would be operating concurrently. For the two tank replacement improvements, which have a larger work-site area, the construction noise levels were estimated by assuming that the three loudest equipment for these two project improvements would be operating concurrently. The estimated construction noise levels associated with the nine project improvements along with the measured ambient noise levels in the general vicinity where construction activities associated with these project improvements would occur are shown in Table 3.13-9.

County

Construction activities associated with three of the proposed project improvements would occur within the jurisdictional boundary of the County of Los Angeles:

- Fernwood Tank Improvement in the Fernwood neighborhood on the west side of Topanga Canyon Boulevard just south of the community of Topanga
- Coastline Drive 12-inch Waterline Improvement Site
- District 29 Creek Crossing Repairs (Topanga Canyon Creek site only)

As shown in Table 3.13-9, the maximum construction noise levels estimated for the tank replacement and waterline replacement/installation activities occurring in the County could reach 85 and 82 (L_{max})

dBA at a distance of 50 feet. The tank replacement site in the Fernwood neighborhood is located in a hilly residential community and has adjacent single-family residences on two sides that are located closer than 50 feet from the site boundary. The Topanga Canyon Creek site is located along PCH, and the nearest sensitive receptor location is the Topanga Ranch Motel, located approximately 140 feet to the northeast. Additionally, the nearest business structure to the Topanga Canyon Creek site is the Rosenthal Wine Bar & Patio, located approximately 45 feet away on the north side of PCH. Using the construction noise levels associated with the tank replacement and waterline replacement and/or installation activities at a distance of 50 feet as a reference, the construction noise levels at each of the aforementioned receptors are estimated and shown in Table 3.13-10.

The County Noise Ordinance exempts construction activity, provided that it does not occur on weekdays between the hours of 7 p.m. and 7 a.m. or at any time on Sundays or holidays. Construction work at the Fernwood Tank Improvement and the Coastline Drive 12-inch Waterline Improvements sites and on Coastline Drive would occur within the County's permissible hours of construction. However, the District 29 Creek Crossing Repairs project at Topanga Canyon Creek is anticipated to include nighttime (7 p.m.–7 a.m.) and weekend work. As such, these construction activities that occur outside of the permissible hours and days would violate the County's Noise Ordinance unless a variance is obtained from the County's health officer.

In addition, the County has also established construction noise standards that are applicable to construction equipment based upon their duration of operation. As shown in Table 3.13-10, the maximum construction noise levels at the nearby motel and business from the District 29 Creek Crossing Repairs work at Topanga Canyon Creek would not exceed the County's noise standards. However, the maximum construction noise level at the Fernwood Tank Improvement and the Coastline Drive 12-Inch Waterline Improvements sites could reach up to 93 and 87 dBA, respectively, which would exceed the applicable County's noise standard for single-family residential uses at the two construction area locations. It should be noted that L_{max} noise levels associated with the construction equipment would only be generated when the equipment are operated at full power. Typically, the operating cycle for a piece of construction equipment would involve one or two minutes of full-power operation, followed by three or four minutes at lower power settings. As such, the L_{max} noise level would only occur occasionally throughout the construction day. Additionally, during the quieter phases of construction and/or when construction activity moves farther away from the receptor within the site, the noise levels would decrease. As such, the highest construction noise levels experienced at the adjacent sensitive receptors would only occur over a temporary period within the overall construction schedule for the Fernwood Tank Improvement and Coastline Drive 12-Inch Waterline Improvements. Nonetheless, construction noise levels of the magnitude shown in Table 3.13-10 would dominate the existing noise environment at the construction sites, and the nearby receptors located adjacent and in proximity to the construction sites would be exposed to noise increases above existing ambient noise levels during the construction activities.

Table 3.13-9. Predicted Noise Levels from Construction Activities

Project Improvement	Jurisdiction	Construction Activity Type	Construction Noise Level (dBA L_{eq}) at 50 feet [a]		Measured Daytime Ambient Noise Level [b]	
			dBA L_{eq}	dBA L_{max}	Noise Level (dBA L_{eq})	Measurement Location
1. Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	Malibu	Waterline replacement/ installation	83	85	44.7	ST3
2. Coastline Drive 12-Inch Waterline Improvements	County	Waterline replacement/ installation	83	85	56.3	ST2
3. District 29 Creek Crossing Repairs		Waterline replacement/ installation	81	82		
Topanga Canyon Creek	County				69.7	ST5
Pena Canyon Creek	Malibu				73.9 [c]	LT1
Las Flores Canyon Creek					70.7 [d]	ST7
Coal (Carbon) Canyon Creek					70.7 [d]	ST7
Corral Canyon Creek					70.7 [d]	ST7
Escondido Creek					59.0 [d]	ST4
Zuma Creek					ND [e]	NA
4. Fernwood Tank Improvement	County	Tank replacement	84	85	43.5	ST1
5. PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach)	Malibu	Waterline replacement/ installation	81	82	59.0	ST4
6. PCH and Topanga Beach Drive Waterline Improvements	Malibu	Waterline replacement/ installation	83	85	69.7	ST5
7. Emergency Source of Water Supply Connection (Las Virgenes)	Malibu	Waterline replacement/ installation	83	85	ND [e]	NA
8. Big Rock Bypass Improvements	Malibu	Waterline replacement/ installation	83	85	73.9 [c]	LT1
9. Upper Encinal Tank Improvement	Malibu	Tank replacement	84	85	ND [e]	NA

Notes: ND = No Data; NA = Not Applicable

[a] Details of the construction noise levels are provided in Appendix E.

[b] Given the expansive area of the proposed project, measured ambient noise levels at each of the construction areas associated with the project's 9 components were not obtained. In these instances, ambient noise levels obtained from the nearest measurement location to the construction area is used.

[c] The average daytime noise level obtained from long-term measurement LT1 is presented.

[d] As no ambient noise level measurement was conducted at this exact location, the level obtained from the nearest measurement location along PCH is used.

[e] No representative ambient noise level measurements were conducted in proximity to this location.

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Table 3.13-10. Predicted Project Construction Noise Levels within County of Los Angeles

Project Improvement	Nearest Off-Site Receptor	Construction Noise Levels (dBA L_{max})[a]	Applicable County Noise Standard (dBA L_{max})
Fernwood Tank Improvement	Single-family residence	93	60[b]
Coastline Drive 12-Inch Waterline Improvements	Single-family residence	87	75[c]
Creek Crossing Repair–Topanga Canyon Creek	Motel	83	85[d]
	Business	73	85

Notes:

[a] The construction noise level for the tank replacement activities is calculated based upon the acoustical average distance between the construction area and the nearest receptor, which is calculated by multiplying the shortest distance between the receiver and the noise source area by the farthest distance, and then taking the square root of the product. For the waterline replacement/installation activities, the construction noise level is calculated based upon the distance from the center of the roadway ROW, where the waterline would be replaced/installed to the receptor.

[b] As the construction activities for the tank replacement would exceed a period of 10 days, the County's noise standard for single-family residential uses from stationary equipment is applied.

[c] As it is anticipated that approximately 100 feet of pipeline on the public road ROW would be replaced/installed per day, the noise levels experienced at any given sensitive receptor would only be temporary and would gradually be reduced when construction progresses along the alignment. Because construction activities would not exceed a period of 10 days at any given sensitive receptor, the County's noise standard for single-family residential uses from mobile equipment is applied.

[d] As the construction activities for the waterline repair is anticipated to occur within a period of 10 days, the County's noise standard for semi-residential/commercial from the operation of mobile equipment is applied to the motel use.

Overall, the proposed project's construction activities would need to occur outside of the County's permissible hours and days for construction for the District 29 Creek Crossing Repairs work at Topanga Canyon Creek and would exceed the County's applicable construction noise standard for single-family residential uses at the Fernwood Tank Improvement and Coastline Drive 12-Inch Waterline Improvements. However, under Section 12.08.570(H) of the County Noise Ordinance, all utility company maintenance and construction operations that occur at any time on a public ROW and on private real property deemed necessary to protect the public's health and well-being, including the repair of water hydrants and mains, are exempt from the noise restrictions established in the County Noise Ordinance. As a water system improvement project that serves to improve the existing aging water system infrastructure and provide a more reliable water system for existing District 29 customers, the proposed project would be exempt from the provisions of the County Noise Ordinance. Although the proposed project would be exempt, because the proposed project's construction noise levels would exceed the County's construction-related noise standards, impacts would be significant.

To minimize the noise levels to which sensitive receptors located in proximity to the construction sites would be exposed, **Mitigation Measure (MM) NOI-1** would be implemented to reduce noise from construction to the greatest extent practicable. Although MM NOI-1 would reduce noise levels, they would remain above the County's standards for short periods of time, resulting in a significant and unavoidable impact.

City

Aside from the Upper Encinal Tank Improvement, all of the proposed project's remaining construction activities within the City of Malibu would be for waterline improvements. As shown in Table 3.13-9, the average hourly noise level for the proposed project's tank improvement construction activities would be 84 dBA L_{eq} at a distance of 50 feet, while the average hourly noise levels for the proposed project's waterline improvement construction activities would generally range from 81 to 83 dBA L_{eq} at a distance of 50 feet.

The Upper Encinal Tank Improvement site is located in a relatively isolated area at the end of Vista Del Preseas, which is a low-volume, dead-end road off of Encinal Canyon Road. This general area is sparsely populated with single-family residences, with the nearest residence located approximately 400 feet south of the improvement site. Additionally, due to the local topography of the area, there is no direct line-of-sight of the residences to the south from the Upper Encinal Tank Improvement site. Based upon distance attenuation and taking into consideration that the natural terrain obstructing the direct line-of-sight of the site from the nearest receptor would provide additional noise attenuation, the construction-related noise levels experienced at the nearest receptor is estimated to be approximately 61 dBA L_{eq}.[4] Given the quiet noise environment that is generally associated with these sparsely developed residential areas in the city, the single-family residences located south of the improvement site potentially could still be exposed to noise increases above existing ambient noise levels during construction activities. However, the City's Noise Ordinance regulates construction-related noise levels by prohibiting construction activities from occurring during specific hours of the day. Specifically, Section 8.24.050 of the Noise Ordinance prohibits construction activities from occurring between the hours of 7 p.m. and 7 a.m. on weekdays. before 8 a.m. or after 5 p.m. on Saturdays, or at any time on Sundays or holidays. As part of the proposed project, the construction activities for the Upper Encinal Tank Improvement would only occur during the permissible construction hours indicated in Section 8.24.050 of the City's Noise Ordinance. As such, impacts would be less than significant.

During the proposed project's construction activities for the waterline improvements within the public road ROW, the nearest off-site sensitive receptors that would be exposed to construction noise levels would be the residential uses located along the roadways. In many instances, especially for the waterline improvements occurring in the residential communities located off of PCH, these construction activities would most likely be located within 50 feet of sensitive receptors, and, as such, these receptors would be exposed to noise levels greater than those shown in Table 3.13-9. Any increase in noise levels at these sensitive receptors during the waterline improvement activities would not generate continuously high noise levels, although occasional single-event disturbances from excavation and pipe installation activities are possible. In addition, because it is anticipated that approximately 100 feet of pipeline on the public road ROW would be replaced/installed per day, the construction noise levels experienced at a given sensitive receptor location would decrease once construction activities at one location finish and move to another location further along the ROW. As such, although sensitive receptors would be exposed to noise increases above existing ambient noise levels during the project's waterline construction, noise from these activities would affect a given sensitive receptor for only a short period of time, and construction would be expected to be within 50 feet of an individual receptor for less than one week. Nonetheless, the proposed project's construction

[4] It is conservatively assumed that the natural terrain that obstructs the direct line-of-sight of the improvement site and the nearest off-site sensitive receptor would provide a 5-dBA noise reduction.

noise levels would dominate the existing noise environment at the various waterline improvement sites in the city, and the nearby receptors located adjacent and in proximity to these sites would be exposed to noise increases above existing ambient noise levels during the construction activities.

As discussed above, the City's Noise Ordinance exempts construction activity, provided that it does not occur on weekdays between the hours of 7 p.m. and 7 a.m., before 8 a.m. or after 5 p.m. on Saturdays, or at any time on Sundays or holidays. Due to traffic conditions on PCH, waterline improvements on PCH would be subject to **MM TRA-3**, in Section 3.17, *Transportation*, would require construction to be confined to non-peak hours, which may include nighttime construction. Section 8.24.060 of the City Noise Ordinance allows for construction to be performed outside of the City's permissible construction hours if written permission is received from the City Manager. If authorization is obtained from the City Manager for nighttime construction, the proposed project would be exempt from the City Noise Ordinance. The City Noise Ordinance does not specify quantitative construction noise standards, but nighttime construction activities associated with the waterline improvements would expose sensitive receptors to substantially increased noise levels for short periods of time, which would represent significant construction noise impacts during construction.

To minimize the noise levels to which sensitive receptors located in proximity to the construction sites would be exposed, **MM NOI-1** would be implemented to reduce noise from construction to the greatest extent practicable. Although **MM NOI-1** would reduce noise levels, they would remain above the County's standards for short periods of time, resulting in a significant and unavoidable impact.

Operation

Once construction of the proposed project water system improvements has been completed, the operation of the two new water tanks and waterlines would result neither in new noise sources, nor an increase in noise levels. The new and replaced waterlines would operate underground, and the work sites along the public ROW would be restored to their previous conditions. As such, similar to existing conditions, no audible operational noise levels from the waterlines would be generated that would adversely affect noise-sensitive uses located along the public ROW. Additionally, while the respective pump stations at the two water tank sites would be a noise source, the tank replacement activities would retain the existing pump stations and associated appurtenances that currently serves the two tank sites. As such, no new noise source would be introduced at the water tank site. Therefore, operational noise impacts resulting from implementation of the proposed project would be less than significant.

Impact NOI-XIII.b.

Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less than significant with mitigation.

Construction

During construction of the proposed project improvements, vibration would occur as large pieces of construction equipment access and operate on the two water tank sites and along the waterline alignment on PCH and other local roadways. As discussed previously, vibration can result in effects that range from human annoyance to structural damage. The land uses in the project area that would be most adversely affected by vibration generated from the proposed project's construction activities

would be the existing residential uses located along PCH and in the residential communities located off of PCH. Using Caltrans vibration criteria to assess building damage (refer to Table 3.13-3) for the purposes of conducting a conservative analysis, the residential buildings in the project area are considered older residential structures. As presented in Table 3.13-3, the PPV threshold for older residential structures is 0.3 in/sec. Table 3.13-11 summarizes the distances from heavy construction equipment (e.g., graders, loaders, scrapers) where groundborne vibration would be reduced to levels below these criteria.

Table 3.13-11. Distances from Construction Equipment for Compliance with Building Damage Vibration Criteria

	Distance to Reduce Groundborne Vibration below Criterion	
Applicable Criterion	Large Mobile Equipment[a]	Small Mobile Equipment[b]
0.3 in/sec PPV (older residential structures)	9 feet	1 foot

Notes:
[a] Representative of any full-size/large excavator, grader, loader, etc.
[b] Representative of any small excavator, grader, dozer, loader, etc.

With respect to vibrational impacts related to human annoyance, the County of Los Angeles has set a threshold of 0.01 in/sec, which is defined as the vibration perception threshold for individuals. Table 3.13-12 summarizes the distances from heavy construction equipment (e.g., graders, loaders, scrapers) where groundborne vibration would be reduced to levels below this perception threshold.

Table 3.13-12. Distances from Construction Equipment for Compliance with County of Los Angeles Vibration Perception Threshold

	Distance to Reduce Groundborne Vibration below Threshold	
Applicable Threshold	Large Mobile Equipment[a]	Small Mobile Equipment[b]
0.01 in/sec PPV (perception threshold)	183 feet	9 feet

Notes:
[a] Representative of any full-size/large excavator, grader, loader, etc.
[b] Representative of any small excavator, grader, dozer, loader, etc.

County

The proposed project's construction activities that would occur within the jurisdictional boundary of the County of Los Angeles include the Fernwood Tank Improvement, Coastline Drive 12-Inch Waterline Improvements, and District 29 Creek Crossing Repairs at the Topanga Canyon Creek site.

At the Fernwood Tank Improvement site, the nearest receptors that potentially could be affected by vibration generated during construction would be the two single-family residences located directly adjacent to the site. With these residential structures located as close as 5 feet from the work site boundary, vibration levels exceeding the 0.3 in/sec criteria for building damage could potentially occur if large mobile equipment were used within that distance. Although the vibration levels would not exceed the 0.3 in/sec criteria if smaller-sized mobile equipment were used, it is uncertain at this time the size of the mobile equipment working at the tank replacement site. As such, vibrational impacts related to building damage are considered to be significant at the tank replacement site.

With respect to human annoyance, Section 12.08.560 of the County Noise Ordinance prohibits the operation of any device that creates vibration above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public ROW. Given that the adjacent residential uses are located as close as 5 feet from the work site boundary and that the County's threshold of 0.01 in/sec would be exceeded by larger-sized and smaller-sized mobile equipment at distances of 183 feet and 9 feet, respectively, the operation of mobile equipment at the tank replace site would exceed the County's vibration threshold. However, as discussed previously, as a water system improvement project, the proposed project would be exempt from the County's noise and vibration restrictions in accordance with Section 12.08.570(H) of the County Noise Ordinance. Thus, the temporary exceedance of the County's vibration perception threshold at the two adjacent single-family residences during construction activities at the tank replacement site would not be a significant impact, as a vibration level of 0.01 in/sec is considered to be barely perceptible (refer to Table 3.13-4). Nonetheless, because vibrational impacts related to building damage can potentially occur if large mobile equipment is used within 5 feet of the adjacent single-family residences, this impact would be significant. Implementation of **MM-NOI-2,** which would require the use of smaller-sized mobile equipment near the work site boundary at the tank replacement site, would reduce this impact level to less than significant.

The waterline replacement/installation activities at the Coastline Drive 12-Inch Waterline Improvements site would occur in proximity to the existing residential uses located along that road. The property lines of these residential uses are located approximately 40 feet from the center of Coastline Drive. Given this distance, however, the operation of mobile equipment within the work site on Coastline Drive would not generate vibration levels that would result in building damage.

For the waterline replacement/installation activity at the District 29 Creek Crossing Repairs – Topanga Canyon Creek site, located along PCH, no residential structures are located in proximity to the site. The nearest off-site structures include the Topanga Ranch Motel, located approximately 140 feet to the northeast, and the Rosenthal Wine Bar & Patio business structure, located approximately 45 feet north of the work site. Given these distances, the operation of mobile equipment within the work site on PCH would not generate vibration levels that would result in building damage. Furthermore, the proposed project is exempt from the noise and vibration restrictions of the County Noise Ordinance, including the 0.01 in/sec vibration perception threshold that is considered to be barely perceptible. Thus, vibrational impacts at the Coastline Drive 12-Inch Waterline Improvements work site and District 29 Creek Crossing Repairs – Topanga Canyon Creek site would be less than significant.

City

Aside from the Upper Encinal Tank Improvement, all the proposed project's remaining construction activities occurring within the City of Malibu would consist of waterline replacement/installation activities on the public road ROW. As discussed previously, the nearest sensitive receptor to the Upper Encinal Tank Improvement site is located approximately 400 feet away. Given this distance, no vibrational impacts associated with building damage or human annoyance would occur. Given that the residential structures along PCH and residential communities located off PCH are generally set back from the public road ROW, the vibration levels generated by the operation of construction equipment would not exceed the Caltrans 0.3 in/sec criteria for building damage to older residential structures and would generally only be barely perceptible with respect to human annoyance. As such, impacts would be less than significant.

Operation

Operation and maintenance of the proposed project would not produce noticeable vibration levels. No impact would occur.

Impact NOI-XIII.c.

For a project located in the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 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?

Less than significant.

Construction and Operation

The proposed project is not located in the vicinity of a private airstrip or public airport. The nearest airport to the proposed project is the Santa Monica Municipal Airport, located approximately 6.5 miles southeast of the proposed project area. Although there are five heliports within the vicinity of the proposed project, they would not expose construction workers to excessive noise. Thus, impacts would be less than significant.

3.13.3.4 Mitigation Measures

Mitigation Measure NOI-1: Construction Noise Reduction

The construction contractor will use appropriate noise-control measures to reduce short-term noise levels associated with project construction to the extent feasible. Noise controls could include any of the following, as appropriate:

- Construction hours will be in compliance with City of Malibu and County of Los Angeles noise ordinances during construction within each respective jurisdictional boundary, to the extent feasible. Where construction is required outside of permissible hours or days of the week, written permission from the City Manager in accordance with Section 8.24.060(D) of the City Noise Ordinance or a variance from the County Health Officer in accordance with Section 12.08.580 of the County Noise Ordinance will be obtained.
- For construction of the Coastline Drive 12-Inch Waterline Improvements, which is restricted to off-peak hours (see 3.17, *Transportation*), construction will only occur during the daytime, off-peak hours.
- Best available noise-control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) will be used for all equipment and trucks to minimize construction noise impacts.
- If impact equipment (e.g., jackhammers and pavement breakers) is used during project construction, hydraulically or electrically powered equipment will be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where the use of pneumatically powered tools is unavoidable, an exhaust muffler, which can lower noise levels from the exhaust by up to approximately 10 dBA, will be used on the compressed-air exhaust. External jackets on the tools themselves will be used, where feasible, which could reduce noise by 5 dBA. Quieter procedures, such as drilling rather than using impact equipment, will be used whenever feasible.

- Stationary noise sources (e.g., generators, compressors, etc.) will be located as far from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures, where feasible and appropriate) will be used to ensure that local noise ordinance limits are met to the extent feasible. Enclosure openings or venting will face away from sensitive receptors. The use of any stationary equipment will comply with the daytime and nighttime noise limits specified in pertinent noise ordinances to the extent feasible.
- Equipment staging and parking areas will be located as far as feasible from residential and school receptors.
- Haul trucks will not be allowed to idle for periods greater than 5 minutes, except as needed to perform a specified function (e.g., concrete mixing).
- Back-up beepers for all construction equipment and vehicles will be broadband sound alarms or adjusted to the lowest noise levels possible, provided that OSHA and Cal OSHA's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures, such as escorts and spotters, will be employed.
- A designated project liaison will be responsible for responding to noise complaints during the construction activities. The name and phone number of the liaison will be posted conspicuously at construction areas and on all advance notifications. This person will take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring will be presented at regular meetings with the construction contractor, and the liaison will coordinate with the construction contractor to modify, to the extent feasible, any construction activities that generate excessive noise levels.

Mitigation Measure NOI-2: Construction Vibration Reduction

Construction activities associated with the proposed project will avoid the operation of large-sized mobile equipment within 10 feet of neighboring residential structures. Instead, smaller-sized mobile equipment will be used within this distance.

3.13.3.5 Level of Significance after Mitigation

With implementation of **MM-NOI-1**, impacts related to construction noise would be reduced, but not to less-than-significant levels in some locations for short periods of time. Impacts would be significant and unavoidable.

With implementation of **MM-NOI-2**, construction-related groundborne vibration impacts would be reduced to less-than-significant levels.

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3.14 Population and Housing

This section provides information about population and housing in the District 29 study area.

3.14.1 Environmental Setting

3.14.1.1 Population

On January 1, 2018, Waterworks District 29 supplied water to approximately 22,300 people in the City of Malibu and unincorporated area of Los Angeles County (LACWD 2019).

The U.S. Census has the following population information for Malibu (U.S. Census 2019a):

- 2010 Census population 12,645
- 2017 estimated population 12,635 (- 0.08 percent growth since 2010 Census)

The Southern California Association of Governments (SCAG) estimates that the following population growth in Malibu as follows (SCAG 2016):

- 2012 estimated population 12,700 (baseline)
- 2020 estimated population 13,400 (5.5 percent growth over 2012 baseline)
- 2035 estimated population 13,900 (growth of 9.4 percent over 2012 baseline)
- 2040 estimated population 14,100 (growth of 11.0 percent over 2012 baseline)

In the wake of the Woolsey Fire, an unidentified number of people have been forced to relocate due to damage or loss of their homes (see Section 3.14.1.2, *Housing*). Estimates of the displaced population vary widely. In many cases, this relocation was outside the Malibu area, due to the high occupancy rate in the remaining residential communities. It is too early to know how many of these people will return once the housing supply is restored. As of early 2020, many of the destroyed homes have not been rebuilt.

3.14.1.2 Housing

The U.S. Census has the following information about housing units in Malibu (U.S. Census 2019b, 2019c).

- 2010 Census housing units 6,864
- 2017 estimated housing units 7,448

During the Woolsey fire, an estimated 400 single-family homes within the Malibu city limits, according to an analysis or aerial imagery and property records by the *Los Angeles Times* and real estate website Zillow (Stiles and Schleuss 2018). It will take some time for this housing to be reconstructed.

3.14.2 Regulatory Setting

3.14.2.1 Federal

There are no federal regulations related to population and housing that apply to the proposed project.

3.14.2.2 State

There are no state regulations related to population and housing that apply to the proposed project.

3.14.2.3 Local and Regional

SCAG and local governments have regulations and policies related to population and housing. However, none of these regulations or policies are applicable to the proposed project.

3.14.3 Impacts and Analysis

3.14.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Creation of substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).
- Displacement of a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.14.3.2 Impacts

Impact POP-XIV.a.

Would the project induce substantial unplanned population growth in an area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?

No impact.

Construction

Construction of the proposed project would require a relatively small work force, with construction spread over many years. It is expected that construction employees would be drawn from local contractors and labor. Therefore, construction would have no result in population growth directly or indirectly; no impact would occur.

Operation

The proposed project would replace and repair existing pipelines and reservoirs and provide an emergency water connection to be used if the primary pipeline is unavailable. It would not include new homes, businesses, or similar uses that can lead to direct population growth. The project would not increase the capacity of the water systems beyond the current demand for domestic water and firefighting. Therefore, it would not lead to population growth indirectly. There would be no impact related to the creation of substantial population growth either directly or indirectly.

Impact POP-XIV.b.:

Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No impact.

Construction and Operation

The project would be within existing roadway rights-of-way for pipe replacement or construction or on District 29 property to replace the existing water tanks. The project would not displace any existing people or housing. Therefore, there would be no impact related to the need for construction of replacement housing.

3.14.3.3 Mitigation Measures

There would be no impacts related to population or housing. No mitigation is required.

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3.15 Public Services

For analysis of potential impacts to parks and other recreational facilities, see Section 3.16, Recreation. For more information about fire protection, see Section 3.20, Wildfire.

3.15.1 Environmental Setting

3.15.1.1 Fire Protection

The County of Los Angeles County Fire Department (LACoFD) provides fire protection and emergency medical services (EMS) for the District 29 project area. The LACoFD operates 174 stations, 180 engine companies, 67 paramedics, and 32 quints crews (*quints* is short for quintuple combination pumpers). It employs 4,834 personnel, including firefighters, pilots, lifeguards, dispatchers, foresters, and health hazmat crews. The Department's operations are divided into nine divisions, with 22 battalions serving unincorporated areas of Los Angeles County and 58 contract cities, including Malibu. In 2015 (the most recent statistics available), the LACoFD responded to approximately 389,313 incidents, of which approximately 78 percent were for emergency medical services, 13 percent were for mutual aid and miscellaneous calls, 7 percent were false alarms, and 2 percent were for fires. (LACoFD 2017)

Division VII of the LACoFD serves Malibu and five other cities in western Los Angeles County, as well as the unincorporated lands in the area. This division has three battalions and 19 stations. The following fire stations serve the project area:

- Fire Station #69, 401 S. Topanga Canyon Road
- Fire Station #70, 3970 Carbon Canyon Road (Battalion 5 Headquarters)
- Fire Station #71, 28722 Pacific Coast Highway
- Fire Station #72, 1832 Decker Canyon Road
- Fire Station #88, 23720 Malibu Road
- Fire Station #99, 32550 Pacific Coast Highway

Other nearby fire stations are Calabasas, Agoura, Agoura Hills, and Westlake Village. The LACoFD's Forestry Division provides natural resource management service and programs, including information about brush clearance, vegetation management, and fire danger. It also provides guidelines for and reviews landscape and irrigation plans. (Malibu 2019a)

For more information about wildland fires, see Section 3.20, *Wildfire*.

3.15.1.2 Police Protection

The County of Los Angeles County Sheriff's Department (LASD) provides law enforcement services for the District 29 project area. It is the largest sheriff's department in the world, with approximately 18,000 employees. LASD provides services to 42 contract cities, 141 unincorporated communities, 216 facilities, hospitals, and clinics throughout the county, nine community colleges, the Metropolitan Transit Authority, and 37 Superior Courts. It provides services such as laboratories and academy training to smaller law enforcement agencies within the County. Additionally, LASD is responsible for securing approximately 18,000 inmates daily in seven custody facilities. (LASD 2017)

Between January 1 and October 31, 2018, LASD reported 11,730 violent crimes, 147 criminal homicides, 7,325 aggravated assaults, 727 rapes, and 3,537 robberies. Most crime in Los Angeles is trending downward. (LASD 2018)

The Malibu/Lost Hills Sheriff's Station (Station 22), at 27050 Agoura Road, Agoura serves the District 29 project study area. It is in the North Patrol Division and also serves the surroundings unincorporated area, including the cities of Agoura Hills, Calabasas, Hidden Hills and Westlake Village and surrounding areas,. Within this station, the sheriff's department has specialized units to address specific issues in the communities it serves, including the Juvenile Intervention Team and Malibu Search and Rescue. Supplemental enforcement on local beaches is provided during peak summer months by the Malibu Beach Team, and the Volunteers on Patrol VOP, which assists deputies with parking enforcement, traffic control, and disaster response. (Malibu 2019b) From the Malibu/Lost Hills Station, LASD managers the Malibu Search and Rescue Team, an all-volunteer organization comprised of Los Angeles County Sheriff's Department Reserve Deputy Sheriffs, a select group of civilian volunteer specialists and incident support personnel.

3.15.1.3 Schools

The Santa Monica-Malibu Unified School District (SMMUSD) is headquartered in Santa Monica and serves the cities of Santa Monica and Malibu. There are also a number of private schools in the study area. There are five public schools in the Malibu and Topanga area (Malibu 2019c):

- Malibu High School, 30215 Morning View Drive, Malibu
- Malibu Middle School, 30215 Morning View Drive, Malibu
- Juan Cabrillo Elementary School, 30717 Morning View Drive, Malibu
- Pt. Dume Marine Science Elementary School, 6955 Fernhill Drive, Malibu
- John L. Webster Elementary School, 3602 Winter Canyon Drive, Malibu
- Topanga Elementary Charter School, 22075 Topanga School Road, Topanga (Los Angeles Unified School District)

There are also a number of private schools in the area, including the following:

- Pepperdine University at 24255 PCH, Malibu
- Our Lady of Malibu School at 3625 Winter Canyon Road, #1, Malibu
- Colin McEwen High School at 23410 Civic Center Way, #E3, Malibu
- The Sycamore School, 3504 Las Flores Canyon Road, Malibu
- MUSE School, 1666 Las Virgenes Canyon Road, Malibu
- Manzanita School and Institute, 1717 Old Topanga Canyon Road, Topanga
- Malibu Methodist Nursery School, 30128 Morning View Drive Malibu
- Esperance Center for Disabled, 29170 Heathercliff Road, #100, Malibu
- Under the Oaks Malibu Preschool, 3480 Las Flores Canyon Road, Malibu
- Gan Malibu Preschool, 22933 PCH, Malibu
- Malibu Methodist Nursery School, 30128 Morning View Drive, Malibu

- COOL School Malibu, 6418 Cavalleri Road, Malibu
- Malibu Presbyterian Church Preschool, 3324 Malibu Canyon Road, Malibu
- Malibu Jewish Center and Synagogue, 24855 PCH, Malibu
- Wagon Wheel School Malibu, 28211 PCH, Malibu
- Topanga Montessori, 1459 Old Topanga Road, Topanga

3.15.1.4 Other Public Facilities

Los Angeles County has a branch library, Malibu Library, at 23519 Civic Center Way. Malibu City Hall is located at 23825 Stuart Ranch Road. It includes the Malibu Civic Theater, a multipurpose room, and a conference room. The Topanga Library at 122 North Topanga Canyon Blvd also has a multipurpose room.

3.15.2 Regulatory Setting

For more information about regulations related to wildfire, see Section 3.10, *Wildfires*.

3.15.2.1 Federal

There are no applicable regulations related to public services.

3.15.2.2 State

Fire Codes and Guidelines

The California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout the State of California. The Fire Code includes regulations regarding fire resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services, features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

3.15.2.3 Local and Regional

Los Angeles County Fire Department Fire Code

The Los Angeles County Department's Fire Code establishes standards for the distribution, design, construction, and location of fire protection facilities, including systems incorporated into private development projects. These standards specify fire-flow criteria, minimum distances to fire stations, public and private specifications, and the location criteria and access provisions for fire-fighting vehicles and personnel.

3.15.3 Impacts and Mitigation

3.15.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or creation of a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities

3.15.3.2 Impacts

Impact PS-XV.a.i.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

Less than significant.

Construction

The proposed District 29 improvements would have minimal impacts on fire protection. During construction, especially on PCH, the reduced travel lanes over a short period of time could minimally affect response times for emergency responders, but the construction period at any location would be very limited. Therefore, construction impacts on fire protection would be less than significant.

Operation

Once the construction is complete, there would be no change in the performance of the fire department, except that the proposed project would increase the reliability of water for fighting fires. No impact would occur.

Impact PS-XV.a.ii.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

Less than significant.

Construction

The proposed District 29 improvements would have minimal impacts on police protection. During construction, especially on PCH, the reduced travel lanes over a short period of time could minimally affect response times for police response, but the construction period at any location would be very limited. The County's contractors would provide security on construction sites and staging areas. Therefore, construction impacts on police protection would be less than significant.

Operation

Once the construction is complete, there would be no change in the performance of the sheriff's department. No impact would occur.

Impact PS-XV.a.iii.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?

Less than significant.

Construction

The proposed District 29 improvements would have minimal impacts schools. Construction would use local contractors and crews, so no greater demand for schools would be created. Construction would not block access to any school. Therefore, construction impacts on schools would be less than significant.

Operation

Once the construction is complete, there would be no change in population, so no new demand would be created for schools nor changes to access to any school. No impact would occur.

Impact PS-XV.a.iv.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?

Less than significant.

See Section 3.16, *Recreation*, for potential impacts to parks and recreational facilities.

Impact PS-XV.a.v.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

Less than significant.

Construction

The proposed District 29 improvements would have minimal impacts other public facilities, such as libraries and community facilities. Construction would use local contractors and crews, so no greater demand for facilities would be created. Construction would not block access to any public facilities. Therefore, construction impacts on public facilities would be less than significant.

Operation

Once the construction is complete, there would be no change in population, so no new demand would be created for public facilities and no changes to access to any these facilities. No impact would occur.

3.15.3.3 Mitigation Measures

The project would result in less-than-significant impacts to public services. No mitigation is required.

3.16 Recreation

This section addresses recreational facilities, including parks, trails, beach access, and other facilities at schools or on private property.

3.16.1 Environmental Setting

The Malibu area is rich in recreational opportunities. The location, between the ocean and the Santa Monica Mountains, offers many such opportunities. Parks, beaches, and trails are located throughout and around the city. Public recreational facilities in the area include city recreational facilities, Los Angeles County parks and beaches, California state parks and beaches, Santa Monica Mountains Conservancy parks, and a national recreation area. Table 3.16-1 lists these major facilities.

Table 3.16-1. Parks and Recreational Facilities in the District 29 Project Area

Owner or Manager	Recreational Facilities
City of Malibu	Malibu Bluffs Park, Trancas Canyon Park, Las Flores Creek Park, Legacy Park, Charmlee Wilderness Park Other recreational facilities: various community facilities at the Civic Center, a community pool, a community center in Malibu Bluffs Park, and a senior center[1]
Los Angeles County Department of Parks and Recreation	Dan Blocker Beach (formerly Corral Canyon Beach, Las Tunas Beach, Malibu Lagoon State Beach (in conjunction with the California Department of Parks and Recreation), Nicholas Canyon Beach, Topanga Beach, Westward State Beach (also in conjunction with California Department of Parks and Recreation), and Zuma Beach[2]
California Department of Parks and Recreation	Malibu Pier, Malibu Surfrider Beach (in conjunction with the Los Angeles County Department of Parks and Recreation), Point Dune State Beach, Malibu Lagoon State Beach, Malibu Creek State Park, Leo Carrillo State Park, Robert H. Meyer Memorial State Beach (including El Matador State Beach, El Pescador State Beach, and La Piedra State Beach), Topanga State Park[3]
Santa Monica Mountains Conservancy	Corral Canyon Park and Solstice Canyon Park Corral Canyon Park[4]
National Parks Service	Santa Monica Mountains National Recreation Area, multiple locations including Zuma/Trancas Canyons, Solstice Canyon, and other private and federal holdings[5]

Sources:
[1] Malibu 2013.
[2] Los Angeles County Department of Parks and Recreation 2019.
[3] California Department of Parks and Recreation 2019.
[4] Santa Monica Mountains Conservancy 2019.
[5] National Parks Service 2012.

In addition, the Santa Monica/Malibu Unified School District operates facilities, typically on school campuses, that are open to the public (some only to local residences). There are also privately owned facilities, which generally require some form of membership or residence. These include boating, tennis, beach, and riding clubs and privately owned camps. Organized groups in the Malibu area

provide recreational opportunities, including the Malibu Recreational Council, soccer associations, baseball leagues, softball leagues, football leagues, equestrian clubs, senior citizen groups, and religious groups. Commercial recreation developments or facilities also serve public recreational needs. Sailing, surfing, windsurfing, and scuba instruction and equipment rentals are available at locations in the Malibu Pier area. Other commercial recreation activities include chartered boats, fishing, and horseback riding. (Malibu 2017).

There are numerous trails crisscrossing the Malibu area and in the surrounding mountains. They vary from urban sidewalks to serious hiking trails. Many more are planned. The Santa Monica Mountains Trail Council is working with various agencies, organizations, companies, and individuals in the area to organize trail projects, coordinate volunteer trail maintenance, support acquisitions of public land for trails, and promote public awareness and use of trails. See Table 3.16-2, in Section 3.16.3, *Impacts and Mitigation,* for trails that cross or are near the District 29 improvement locations.

Although the coastline in the Malibu area has large stretches lined with private beachfront, there are numerous public easements to the beach. The State of California owns the lands seaward of what is called the "mean high tide line." This means that the public has the right to access this area. Although it is difficult to ascertain the boundary between public and private lands, the general rule is that visitors have the right to walk on wet sand (California Coastal Act of 1976). In order to ensure public access to the wet sand, there are numerous public access points. See Table 3.16-2 for beach access locations near the District 29 improvement locations.

3.16.2 Regulatory Setting

3.16.2.1 Federal

Federal Coastal Zone Management Act of 1972

The U.S. Congress recognized the importance of meeting the challenge of continued growth in the coastal zone by passing the Coastal Zone Management Act in 1972. This act, administered by National Oceanic and Atmospheric Administration (NOAA), provides for the management of the nation's coastal resources. It required states with a coastline to develop and implement management measures to protect the coastal zone. This, in part, led to the California Coastal Act, which is discussed below.

3.16.2.2 State

California Coastal Act of 1976

One of the major goals of the California Coastal Act is to maximize public access to and along the coast. The California Coastal Commission is responsible for implementing the public coast access program for the length of the California coastline.

3.16.2.3 Local and Regional

Malibu General Plan

The Open Space and Recreation Element of the Malibu General Plan includes the following policy and implementation measure applicable to District 29 improvements in the Malibu city limits:

- **OS Policy 2.1.3**. The City shall preserve, protect, and maintain parks to assure continued enjoyment for future generations.
- **OS Implementation Measure 64**. Work with other agencies to ensure that existing developed accessways are not closed, abandoned or rendered unusable.

Malibu Local Coastal Program

The entire City of Malibu is located within the California coastal zone, which means that all development and activity occurring within city limits (unless considered exempt) is subject to the regulations of the City's Local Coastal Program (LCP). LCPs contain the ground rules for protecting sensitive coastal resources and public access along the entire coastline of California. Malibu's LCP was certified by the Coastal Commission in 2002. It grants the City the right to review and approve coastal development permits at the local level. The District 29 project would file for an exemption for repair, replacement, and minor alterations of existing public water infrastructure under Coastal Zone Regulation Section 13,20.065(C).

Los Angeles County General Plan

The Parks and Recreation Element of the Los Angeles County General Plan includes the following policy applicable to the District 29 project improvements within the jurisdiction of Los Angeles County:

- **Policy P/R 1.5:** Ensure that County parks and recreational facilities are clean, safe, inviting, usable and accessible.

Santa Ana Mountains Local Coastal Program

The Santa Monica Mountains (SMM) Coastal Zone is the unincorporated portion of the SMM west of the City of Los Angeles, east of Ventura County, and south of the coastal zone boundary, excluding the City of Malibu. The Coastal Zone extends inland from the shoreline approximately 5 miles. The SMM LCP consists of the Land Use Plan (LUP) and implementing actions, including the Local Implementation Program (LIP), a series of ordinance sections added to the Zoning Ordinance, Title 22 of the County Code. The LUP was certified by the Coastal Commission in 1986. Policies applicable to the District 29 project include those addressing protection and expansion of public access to shoreline and recreational opportunities. The District 29 project would file for an exemption for repair, replacement, and minor alterations of existing public water infrastructure under Coastal Zone Regulation Section 13,20.065(C).

3.16.3 Impacts and Mitigation

3.16.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below:

- Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.16.3.2 Impacts

Table 3.16-2 identifies the recreational facilities near specific District 29 project locations. These locations are considered in the impact analysis in this section.

Table 3.16-2. Recreational Facilities near District 29 Project Locations

Recreation Facility	Nearby District 29 Project Location	Relationship
California Coastal Trail	Staging Area: Zuma County Beach PCH 8-Inch Waterline: Zumirez Dr-Escondido Beach Rd Creek Crossing: Escondido Creek Creek Crossing: Corral Canyon Creek PCH & Topanga Beach Drive (Segment 2) Creek Crossing: Coal (Carbon) Canyon Creek PCH & Topanga Beach Drive (Segment 2) Creek Crossing: Las Flores Canyon Creek Staging Area: Las Tunas County Beach Creek Crossing: Pena Canyon Creek Big Rock Bypass Creek Crossing: Topanga Canyon Creek PCH & Topanga Beach Drive (Segment 1) Staging Area: Topanga County Beach Coastline Dr.	Trail is adjacent or nearby (within ¼ mile)
Coastal Slope Trail	Coastline Drive	Trail is adjacent to roadway
	Staging Area: Topanga Field Yard	Trail is adjacent to road and staging area
	Staging Area: Sunset Mesa	Trail is within ¼ mile
Topanga Beach	Staging Area: Topanga County Beach	Staging area in beach parking lot adjacent to beach
Tuna Canyon Trail	PCH & Topanga Beach Drive (Segment 1)	Trial is adjacent PCH
Las Tunas Beach	Big Rock Bypass	In roadway adjacent to the parking lot for the beach
	Staging Area: Las Tunas County Beach	In beach parking lot adjacent to the beach
Budwood Motorway	Big Rock Bypass Staging Area: Las Tunas County Beach	Within ¼ mile
Big Rock Beach Public Beach Access	Big Rock Bypass	Beach access is adjacent PCH
Carbon Beach Public Beach Access (2 locations)	PCH & Topanga Beach Drive Waterline Improvement (Segment 3)	Beach access is adjacent PCH
Malibu Creek Trail	Staging Area: RMD Winter Canyon Yard	Trail is adjacent to staging area
Escondido Beach Public Beach Access (2 locations)	PCH 8-inch Waterline (Zumirez Dr-Escondido Beach Rd.)	Beach access is adjacent PCH

Recreation Facility	Nearby District 29 Project Location	Relationship
Haunted House Trail	PCH 8-inch Waterline (Zumirez Dr-Escondido Beach Rd.) Creek Crossing: Escondido Creek	Trail is adjacent to PCH and bridge crossing
Izumi Connector Trail	PCH 8-inch Waterline (Zumirez Dr-Escondido Beach Rd.)	Trail is adjacent to PCH
Wandering Way Trail	PCH 8-inch Waterline (Zumirez Dr-Escondido Beach Rd.)	Trail is adjacent to PCH
Paradise Cove Trail	PCH 8-inch Waterline (Zumirez Dr-Escondido Beach Rd.)	Trail is adjacent to PCH; pipeline crosses trail
Zuma Beach	Zuma County Beach Staging Area	Staging area in beach parking lot adjacent to beach

Notes:
PCH = Pacific Coast Highway
Sources: Malibu Planning Division 2011, Los Angeles Urban Rangers 2008.

Impact REC-XVI.a.

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

Less than significant.

Construction

Construction in roadway rights-of-way could temporarily sever or prevent access to trails or block access to beach access locations for a few days at any one location. This could increase usage of other trails or beach access within the Malibu area, but this usage would be spread between the many trails and beach accesses in the area. Because of the limited time that access and trails would be blocked, any physical deterioration would be minimal. To prevent or reduce even this minimal impact, detours would be provided whenever possible and safe for the few days of the construction in any one location. Therefore, construction impacts related to increased use of existing recreational facilities would be less than significant.

Operation

Operation of the District 29 improvements would not directly or indirectly increase use of existing recreational facilities by increasing population or other factors. No additional population would result from the replacement, repair, and new underground pipeline. Because operation of the project would not increase use of existing recreational facilities, there would be no impacts related to substantial physical deterioration of these facilities.

Impact REC-XVI.b.

Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less than significant.

Construction

The District 29 improvements would not include construction or expansion of recreational facilities. Three beach parking lots would be used as optional staging areas for construction materials and equipment: Topanga Beach, Las Tunas Beach, and Zuma Beach. Use of these parking lots would not result in a physical effect on the environment, but if the construction staging occurred during peak seasons for the use of the beaches, there could be inadequate parking for visitors. For Topanga Beach and Zuma Beach, the staging areas would use only a portion of the parking, with the remaining parking lot and adjacent public parking areas still being available. At Las Tunas Beach, where the parking lot is small and construction staging would use all of the lot, there are adjacent parking spaces available on the street. Therefore, there would be no need for new temporary parking or other construction or expansion of recreational facilities. Consequently, there would be no adverse physical effects from construction or expansion of recreational facilities, and the impact would be less than significant.

Operation

The District 29 project does include construction or expansion of recreational facilities. There would be no impacts related to an adverse physical effect on the environment from such facilities. No impact would occur.

3.16.4 Mitigation Measures

The improvements in the District 29 project would result in less-than-significant impacts on recreation. No mitigation measures are required.

3.17 Transportation

This transportation section is based upon the *Traffic Analysis Report for Waterworks District 29* by JMDiaz, Inc. (JMD) (JMD 2019) (Appendix F). The section addresses potential impacts on transportation systems during the construction and operation of the project.

3.17.1 Environmental Setting

3.17.1.1 Existing Roadway System

Regional access to the project area is from Pacific Coast Highway (PCH) and Topanga Canyon Boulevard. The roadways analyzed in the study area are discussed below.

- **Pacific Coast Highway:** PCH (State Route 1) is a major east-west four-lane arterial running through Malibu and continuing along the coast in both directions. PCH includes a Class III bicycle lane and is designated as a modified major arterial (Malibu 2017).
- **Carbon Canyon Road:** Carbon Canyon Road is a two-lane road that provides access to residential areas north of PCH. It intersects with PCH at a traffic-signal-controlled intersection.
- **Carbon Mesa Road:** Carbon Mesa Road is a two-lane road that extends from Carbon Mesa Road and provides access to residences.
- **Encinal Canyon Road:** Encinal Canyon Road is a north-south two-lane road that provides access to limited residential areas north of PCH. Its intersection with PCH is stop-sign controlled.
- **Coastline Drive:** Coastline Drive is a two-lane road that intersects with PCH at a signalized intersection and provides access to residential areas.
- **Horseshoe Drive:** Horseshoe Drive is a local two-lane street providing access to individual properties in the Fernwood area.

Intersection Operations

Traffic flow on urban arterials is most constrained at intersections. Intersection operations are rated using levels of service (LOS) A through F. LOS A indicates free-flow operations and LOS F indicates congested operations. Eight signalized intersections and 10 stop-sign-controlled intersections were analyzed based upon the Intersection Capacity Utilization (ICU) methodology, which provides an output value that represents a volume-to-capacity. The minimal acceptable LOS for all of these intersections is LOS D. Table 3.17-1 lists the existing conditions (2018) for the signalized study intersections and Table 3.17-2 lists the existing conditions for stop-signed-controlled intersection. Unsignalized (two-way stop sign-controlled) intersection LOS is reported for the major street and minor street (generally, left-turn movements). This method assesses available and critical gaps in the traffic stream, which make it possible for side street traffic to enter the main street flow. It is not unusual for an intersection to experience LOS E and F conditions for the minor street left-turn movements. It should be understood that, often, a poor LOS is experienced by only a few vehicles and that the intersection as a whole operates acceptably.

Table 3.17-1. Summary of Signalized Intersection Operation – Existing Conditions (2018)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU – V/C	LOS	ICU – V/C	LOS
PCH & Coastline Drive	0.95	**E**	1.00	**F**
PCH & Zumirez Drive	0.54	A	0.75	C
PCH & Paradise Cove Road	0.52	A	0.77	C
PCH & Carbon Canyon Road	0.54	A	0.76	C
PCH & Beach Access	0.56	A	0.73	C
PCH & Las Flores	0.61	B	0.80	C
PCH & Rambla Pacifico	0.59	A	0.77	C
PCH & Carbon Beach Estates	0.53	A	0.72	C

Bold text indicates intersection does not meet jurisdiction standards.
ICU = Intersection Capacity Utilization
V/C = volume-to-capacity ratio
LOS = level of service
Source: JMD 2019.

Table 3.17-2. Summary of Stop Sign-controlled Intersection Operation – Existing Conditions (2018)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU – V/C	LOS	ICU – V/C	LOS
Coastline Drive & Surfview Drive	0.18	A	0.17	A
Coastline Drive & Castlerock Road	0.23	A	0.20	A
PCH & Meadows Court	0.48	A	0.72	C
PCH & East Winding Way	0.47	A	0.71	C
PCH & West Winding Way	0.50	A	0.77	C
PCH & Zuma View Place	0.49	A	0.76	C
PCH & Ramirez Mesa Road	0.48	A	0.77	C
PCH & Tuna Canyon Road	0.61	B	0.80	C
PCH & Rambla Vista (west)	0.59	A	0.77	C
PCH & Rambla Vista (east)	0.53	A	0.72	C

Source: JMD 2019.

Roadway Operations

To determine impacts on roadway segments within the study area, nine locations on PCH, one location on Carbon Canyon Road, one location on Horseshow Drive, and one location on Encinal Canyon Road were studied. Existing conditions (2018) on these roadway segments are included in Table 3.17-3. During the existing year conditions, all study roadway segments would operate the peak period at acceptable LOS, except for seven of the PCH segments, as shown in the table.

Table 3.17-3. Summary of Roadway Segment Operations– Existing Conditions (2018)

Segment	AM			PM		
	Density (pc/mi/hr)	HCM LOS	Peak Hour Volume	Density (pc/mi/hr)	HCM LOS	Peak Hour Volume
22042 Carbon Mesa Road	1.1	A	28	1.1	A	29
18788 PCH	25.0	C	1,676	31.8	D	2,137
19399 PCH	24.1	C	1,844	27.5	D	2,2.6
21203 PCH	31.7	D	1,826	35.9	**E**	2,037
21857 PCH	22.6	C	1,772	26.2	D	2,050
25712 PCH	17.1	B	1,243	26.4	D	2,046
27519 PCH	16.8	B	1,212	27.3	D	1,987
29497 PCH	12.8	B	1,113	16.4	B	1,532,
30626 PCH	11.0	A	972	14.7	B	1,427
Horseshoe Drive (at Fernwood Tank access)	3.7	A	44	4.3	A	50
3525 Encinal Canyon Road	1.7	A	59	2.3	A	86
19562 PCH	23.7	C	1,866	27.2	D	2,089
4400 Encinal Canyon Road	1.7	A	59	2.3	A	86

Bold text indicates roadway segment does not meet jurisdiction standards.
pc/mi/hr = passenger car/mile/hour
HCM = Highway Capacity Manual
Source: JMD 2019.

3.17.1.2 Existing Transit System

Los Angeles County Metropolitan Transportation Authority (Metro) is the public transpiration provider serving the study area. Metro's Bus Route 534 has 47 stops between Trancas Canyon Road/PCH on the west and Santa Monica on the east. It is operational only on weekdays. There are 24 stops in the study area include the following (Metro 2019):

- PCH at Trancas Canyon Road
- Malibu Canyon at Civic Center Way
- PCH at Morning View Drive
- Civic Center Way at Winter Canyon Road
- PCH at Heathercliff Road
- PCH at Malibu Pier
- PCH at Busch Drive (near Zuma Beach)
- 22726 PCH (Nobu Restaurant)
- PCH at Kanan Dume Road
- 22718 PCH (public beach access)
- PCH at Zumirez Drive
- 22506 PCH/22506 PCH
- PCH at Paradise Cove Road
- PCH at Rambla Pacifico Street/Rambla Vista)
- PCH at Via Escondido Drive (Malibu Colony)
- 20356 PCH (Moonshadows Restaurant)
- PCH at Corral Canyon Road
- PCH at Big Rock Drive
- PCH at Corral Creek Bridge (Corral Canyon Beach)
- PCH at Tuna Canyon Road
- PCH at John Tyler Drive
- PCH at Topanga Canyon Road
- Malibu Canyon Road at PCH
- PCH at Coastline Drive (Getty Villa)

Los Angeles County Department of Public Works (LACDPW) operates the Beach Bus between Warner Center in Woodland Hills and Downtown Santa Monica, a year-round, 7-days-a-week route, with stops

in the Topanga area at Jalan Jalan Imports/Topanga Canyon Lumber and Topanga General Store/Pine Tree Circle (LACDPW 2019).

3.17.1.3 Existing Bicycle and Pedestrian Facilities

The City of Malibu has designated PCH as a bicycle route (Malibu 2017). The Los Angeles County Bicycle Master Plan designates PCH as a Class III Bike Route. The Master Plan also has proposed Class III Bike Routes on Topanga Canyon Road, Tuna Canyon Road, Malibu Canyon Road, Corral Canyon Road, Latigo Canyon Road, Encinal Canyon Road, Kanan Dume Road, and Fernwood Pacific Drive (LACDPW 2012).

3.17.1.4 Parking

On-street parking is allowed at various locations with the study area, including on one or both sides along PCH. There are several surface parking lots on the beach side of PCH. Except for a short segment of PCH just east of Big Rock Drive, on-street parking is allowed on either side of PCH from the eastern boundary of the city of Malibu to Corral Canyon Road. Parking is not allowed on either side of PCH between Busch Drive and Morning View Drive, and also in the vicinity of Trancas Canyon Road. Also, on-street parking is not allowed on the ocean side of PCH for a small segment just east of Encinal Canyon Road, and is restricted on the ocean side of PCH at Zuma Beach (Malibu 2017).

3.17.2 Regulatory Setting

Transportation and traffic planning and monitoring in the District 29 area are chiefly carried out by the California Department of Transportation (Caltrans) (state highways and freeways), the County of Los Angeles, and the City of Malibu. All three entities make traffic counts and conduct transportation planning. The county and city general plans have transportation elements that are updated periodically. The Southern California Association of Governments (SCAG) also periodically updates regional transportation elements and models.

3.17.2.1 Federal

There are no federal regulations applicable to the District 29 Priority Capital Deficiencies Improvements project.

3.17.2.2 State

Traffic analysis in the state of California is guided by policies and standards set at the state level by Caltrans and the local jurisdictions. The proposed project is within the County of Los Angeles and the City of Malibu's jurisdiction and, therefore, subject to adopted county and city transportation policies and guidelines, which are consistent with Caltrans policies and standards. However, Caltrans retains jurisdiction over PCH, as a state highway, and would be responsible for any permitting related to the highway.

3.17.2.3 Local and Regional

Southern California Association of Governments Regional Transportation Plan and Sustainable Communities Strategy

SCAG's 2016–2040 Regional Transportation Plan and Sustainable Communities Strategy charts a course for closely integrating land use and transportation. There are no proposed capital improvement plans for the Malibu/Topanga area (SCAG 2016).

Los Angeles County Metropolitan Transportation Authority Long Range Transportation Plan

Metro's Long Range Transportation Plan (LRTP) is currently in the process of being updated. The current plan is the 2009 LRTP, which addresses public transportation, highways, strategic unfunded arterials, goods movement system management, demand management, bicycles and pedestrians, and subregional partnerships. The proposed project study area is located in the Las Virgenes/Malibu Subregion (Metro 2009).

The Subregional Mobility Matrix – Los Virgenes/Malibu serves as the starting point for the update of the Metro 2009 LRTP. It includes a preliminary assessment of anticipated investment needs and project and program implementation. It does not prioritize projects, but does identify them as high benefit, medium benefit, low benefit, neutral benefit, and negative impact. Projects identified (but not scheduled) include the following (Metro 2015):

- PCH intersection improvements, Malibu (high benefit)
- PCH lane width and shoulder widening, Malibu (medium benefit)
- Malibu Canyon Road widening, Malibu (high benefit)
- PCH median enhancements from Corral Canyon Road to Winding Way (medium benefit)
- Los Angeles County Bike Plan Class III bike routes (medium benefit)
- Bike routes on Encinal Canyon Road and Latigo Canyon Road (medium benefit)
- PCH bicycle improvements upgrade from Class III to Class II (medium benefit)
- PCH Safety Study – implement improvement include in study (high benefit)
- PCH pedestrian overpass installation (medium benefit)
- PCH HAWK (high intensity activated crosswalk beacon) pedestrian crossing program at 20356 PCH and 22523 PCH (medium benefit)
- Regional parking structures near key activity/transit centers (low benefit)
- Enhancement of seasonal shuttle program from Las Virgenes area to Malibu (high benefit)
- Malibu seasonal shuttle program to connect Malibu and Westside (high benefit)
- Malibu bus stop improvements (31 stops not included in current program) (medium benefit)
- Improved year-round regional transit connection between Malibu and Santa Monica along PCH through shorter headways and other operational improvements (high benefit)

2010 Congestion Management Program for Los Angeles County

A Congestion Management Program is required by state statute for every county that includes an urbanized area. They provide planning to link transportation, land use, and air quality decisions. Metro's 2010 Congestion Management Program is a multimodal program addressing the highway and roadway system, transit network, land use growth trends (Metro 2010). PCH is a designated route within the Congestion Management Plan (Malibu 2017).

County of Los Angeles General Plan 2035 Mobility Element

The Mobility Element of the County of Los Angeles General Plan 2035 includes goals and policies addressing transportation, but these address planning for new or redesigned transportation facilities. The proposed project would not include any new or redesigned transportation facilities. Therefore, there are no applicable goals or policies.

City of Malibu General Plan

The Malibu General Plan includes the following applicable implementation measure related to transportation.

Implementation Measure 6	Promote cooperation between City, County, Sheriff, and Caltrans to limit and restrict hours of closure of PCH, Malibu Canyon Road, and Kanan Dume Road lanes during repairs, construction, filming, and other activities.

City of Malibu Pacific Coast Highway Safety Study

The Malibu PCH Safety Study Final Report looks to identify remedies to reduce the frequency and severity of collisions on PCH. It identifies and recommends prioritization for 130 projects along PCH. The top 10 priority projects involve coordinating signal timing, implementing bike route improvements (upgrading to Class II), modifying medians and lane striping, adding pedestrian warning signs, increasing law enforcement, and evaluating beach parking (Malibu 2015).

3.17.3 Impacts and Mitigation

3.17.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines,[1] the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities.
- Substantial increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Potential to cause inadequate emergency access.

[1] The 2018 CEQA Guidelines revisions specify that vehicle miles traveled (VMT) will be used as the standard for traffic impacts. However, use of this standard is not required until 2020.

3.17.3.2 Impacts

Impact TRA-XVII.a.

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 with mitigation.

Construction

Transit

Construction of pipelines within PCH (Improvements 3, 5, 6, and 8) may require temporary relocation of bus stops (Metro Route 534). The lane reductions during construction would affect operations on PCH, resulting in significant traffic impacts that would affect the ability for buses to keep up with their schedules. This would be a significant impact on transit operations. **Mitigation Measures (MM) TRA-1** and **TRA-3** would limit construction to off-peak hours where traffic would be significantly affected and reduce the impacts on transit operation to less-than-significant levels. However, the City of Malibu does not allow nighttime construction, except with the approval of the City Manager. Therefore, if the City does not agree to allow nighttime work within the city limits, this mitigation measure could not be implemented, resulting in a significant impact and unavoidable impact.

Roadways

Construction of all improvements would require temporary lane closures in order to access the existing waterlines for removal and replacement. For underground waterline replacements, approximately 100 feet of waterline would be excavated in any one day. For replacements of waterlines for the District 29 Creek Crossing Repairs, access to the pipelines under the bridges would require lane closures for boom trucks and other equipment. Table 3.17-4 lists the lane closures for each improvement.

Table 3.17-4. Required Lane Closures

Improvement	Street Affected, Configuration, and Lane Closures	Approximate Construction Dates (and potential overlaps)[1]
1. Carbon Canyon Road and Carbon Mesa Road Waterline Improvements	Carbon Canyon Road – 2 lanes Carbon Mesa Road – 2 lanes 1 lane closure in phases, 1 lane in each direction, but never both lanes at one time	October 2022 to May 2023
2. Coastline Drive 12-inch Waterline Improvements	Coastline Drive – 2 lanes 1 lane closure in phases, 1 lane in each direction, but never both lanes at one time	June 2022 to January 2023

Improvement	Street Affected, Configuration, and Lane Closures	Approximate Construction Dates (and potential overlaps)[1]
3. District 29 Creek Crossing Repairs	PCH – 4 lanes • Topanga Canyon Creek: 1 outside lane in each direction • Pena Canyon Creek: 1 outside lane (southbound only) • Los Flores Canyon Creek: 1 outside lane in each direction • Coal (Carbon) Canyon Creek: 1 outside lane in each direction • Corral Canyon Creek: 1 outside lane (northbound only) • Escondido Creek: 1 outside lane (northbound only) • Zuma Creek: 1 outside lane (northbound only)	August 2021 to January 2022 (potential overlap: Escondido Creek Crossing and PCH 8-inch Waterline Improvements [Zumirez Drive to Escondido Beach Road])
4. Fernwood Tank Improvement	Horseshoe Drive – 2 lanes Full closure for heavy/large vehicles to access tank site during (or possibly before start of) construction hours due to how narrow the roadway is. (No pipeline work within Horseshoe Drive.)	May 2023 to December 2023
5. PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)	PCH – 4 lanes Southbound outside lane in phases	April 2021 to January 2022 (potential overlap: District 29 Creek Crossing Repairs [Escondido Creek])
6. PCH and Topanga Beach Drive Waterline Improvements	PCH – 4 lanes 1 outside lane in phases • Southbound near Las Flores Canyon Road • Southbound near Topanga Canyon Road • Northbound near Carbon Canyon Road	April 2024 to November 2024
7. Emergency Source of Water Supply Connection (Las Virgenes Connection)	Encinal Canyon Road – 2 lanes 1 lane closure in phases, 1 lane in each direction, but never both lanes at one time	May 2022 to September 2022
8. Big Rock Bypass Improvements	PCH – 4 lanes 1 outside, southbound lane in phases	January 2026 to September 2026
9. Upper Encinal Tank Improvement	Avenida De La Encinal, Camino De Buena Ventura, and Vista Del Preseas Full closure for heavy/large vehicles to access tank site during (or possibly before start of) construction hours due to how narrow the roadways are.	October 2021 to July 2022

[1] Only improvements that overlap on same roadway listed.

Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (Improvement 1)

Carbon Canyon Road would be affected by roadway construction traffic and lane closures. On this two-lane road, one lane would be closed in phases for construction of the Carbon Canyon Road and Carbon Mesa Road Waterline Improvements. Construction-related increases in density at this roadway segment would be 102 percent; this would be a less-than-significant impact, as shown in

Table 3.17-5. However, because this is a two-lane, bi-directional roadway, construction-related closure of one lane would result in a hazardous condition, which would be a significant impact. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-2**, concerning traffic control methodologies or lane closure on two-lane roads.

Table 3.17-5. Summary of Road Operations with Improvement 1 Construction

Roadway Segment: 22042 Carbon Canyon Road **Improvement Affected:** Carbon Canyon Road and Carbon Mesa Road Waterline Improvements							
AM Peak Hour			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing							
1.1	A	28	1.1	A	29		
With Construction							
2.2	A	28	2.3	A	29	102%	No
With Construction and Mitigation							
1.1	A	28	1.2	A	29	1%	No

Source: JMD 2019.

Coastline Drive 12-inch Waterline Improvements (Improvement 2)

Three analysis Coastline Drive intersections would be affected by roadway construction traffic: at PCH (signalized), at Surfview Drive (stop sign-controlled), and at Castlerock Road (stop signed-controlled).

The PCH and Coastline Drive intersection would operate at LOS F in both AM and PM peak hours, as shown in Table 3.17-6, compared to the existing (2018) LOS E in the AM peak hour and LOS F in the PM peak hour. In both AM and PM peak hours, the impact would be significant at the PCH and Coastline Drive intersection, according to the Los Angeles County significance threshold. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-2**, concerning traffic control methodologies or lane closure on two-lane roads.

Table 3.17-6. Summary of Signalized Intersection Operation with Improvement 2 Construction

Signalized Intersection	**Existing Peak Hour**				**With Project Peak Hour**				**Significant Impact?**
	AM		**PM**		**AM**		**PM**		
	V/C	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	
With Construction									
PCH & Coastline Dr.	0.95	**E**	1.00	**F**	1.02	**F**	1.05	**F**	**Yes**
With Construction and Mitigation									
PCH & Coastline Dr.	0.95	**E**	1.00	**F**	0.96	**E**	1.02	**F**	**Yes**

Bold text indicates intersection does not meet jurisdiction standards.
Source: JMD 2019.

The Coastline Drive intersections with both Surfview Drive and Castlerock Drive would operate at LOS A in both AM and PM peak hours, as shown in Table 3.17-7. There would be less-than-significant impacts at these intersections during construction. No mitigation is necessary.

Table 3.17-7. Summary of Stop-signed Controlled Intersection Operation with Improvement 2 Construction

Stop Sign-controlled Intersections	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
With Construction									
Coastline Dr & Surfview Dr	0.18	A	0.17	A	0.24	A	0.22	A	No
Coastline Dr & Castlerock Rd	0.23	A	0.20	A	0.23	A	0.21	A	No
With Construction and Mitigation									
Coastline Dr & Surfview Dr	0.18	A	0.17	A	0.18	A	0..18	A	No
Coastline Dr & Castlerock Rd	0.23	A	0.20	A	0.23	A	0.21	A	No

Source: JMD 2019.

District 29 Creek Crossing Repairs (Improvement 3)

PCH would be affected by roadway construction traffic and lane closures required for the District 29 Creek Crossing Repairs. On this four-lane, high-volume road, the outside lane(s) on one or both sides of the road would be closed during construction. Construction-related increases in density at these roadway segments would range from 101 percent to 135 percent; this would be a significant impact at six out of eight roadway segments, as shown in Table 3.17-8. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-8. Summary of Roadway Operations with Improvement 3 Construction

Roadway Segments: Multiple **Improvement Affected:** District 29 Creek Crossing Repairs								
PCH Segment (Address)	**AM Peak Hour**			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
	Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing								
18788	25.0	C	1,676	31.8	D	2,137		
19399	24.1	C	1,844	27.5	D	2,106		
21203	31.7	D	1,826	35.9	**E**	2,037		
21857	22.6	C	1,772	26.2	D	2,050		
25712	17.1	B	1,243	26.4	D	2,046		
27519	16.8	B	1,212	27.3	D	1,987		
29497	12.8	B	1,113	16.4	B	1,532		
30626	11.0	A	972	14.7	B	1,427		
With Construction								
18788	58.5	**F**	1,684	74.5	**F**	2,148	135%	**Yes**
19399	55.3	**F**	1,853	63.3	**F**	2,117	130%	**Yes**
21203	63.7	**F**	1,835	72.1	**F**	2,047	101%	**Yes**
21857	45.3	**F**	1,781	52.7	**F**	2,060	101%	**Yes**
25712	34.3	D	1,249	53.2	**F**	2,056	101%	**Yes**
27519	33.8	D	1,218	54.9	**F**	1,997	101%	**Yes**
29497	25.7	C	1,119	32.9	D	1,540	101%	No
30626	22.2	C	977	29.5	D	1,434	101%	No
With Construction and Mitigation								
18788	29.3	D	1,684	37.2	**E**	2,148	17%	No
19399	27.6	D	1,853	31.6	D	2,117	15%	No
21203	31.8	D	1,835	36.0	**E**	2,047	0%	No
21857	22.7	C	1,781	26.3	D	2,060	0%	No
25712	17.1	B	1,249	26.6	D	2,056	1%	No
27519	16.9	B	1,218	27.4	D	1,997	0%	No
29497	12.8	B	1,119	16.4	B	1,540	0%	No
30626	11.1	B	977	14.8	B	1,434	0%	No

Bold text indicates roadway segments does not meet jurisdiction standards.
Source: JMD 2019.

Fernwood Tank Improvements (Improvement 4)

Horseshoe Drive would be affected by roadway construction traffic and road closures. On this two-lane road, full closure would be required for short periods for heavy and/or large vehicles to access the Fernwood Tank Improvement site during (or possibly before the start of) construction hours due to how narrow the roadway is. (No pipeline work is anticipated within Horseshoe Drive.) Construction-related increases in density at this roadway segment would be 103 percent; this would

be a less-than-significant impact, as shown in Table 3.17-9. However, construction-related closure of this two-lane, bi-directional roadway would result in hazardous conditions and potentially property access issues, which would be a significant impact. This impact would be reduced to less-than-significant levels through traffic control methodologies and construction limitations (**MM-TRA-4**).

Table 3.17-9. Summary of Roadway Operations with Improvement 4 Construction

Roadway Segment: Horseshoe Drive at Fernwood Tank Access **Improvement Affected:** Fernwood Tank Improvements							
AM Peak Hour			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing							
3.7	A	44	4.3	A	50		
With Construction							
7.6	A	45	8.7	A	51	103%	No
With Construction and Mitigation							
3.8	A	45	4.3	A	51	2%	No

Source: JMD 2019.

PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (Improvement 5)

PCH intersections would be affected by roadway construction traffic: two signalized and five stop-sign-controlled intersections.

At the PCH and Zumirez Drive in the AM and PM peak hours, impacts would be less than significant. At the PCH and Paradise Cove Drive signalized intersection, operations would be significantly affected during the PM peak hour. In the AM peak hour, impacts would be less than significant at both intersections. The significant impact could be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-10. Summary of Signalized Intersection Operation with Improvement 5 Construction

Signalized Intersection	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
With Construction									
PCH & Zumirez Dr.	0.54	A	0.75	C	0.54	A	0.76	C	No
PCH & Paradise Cove Rd.	0.52	A	0.77	C	0.58	A	1.43	**F**	**Yes (PM only)**
With Construction									
PCH & Zumirez Dr.	0.54	A	0.75	C	0.54	A	0.76	C	No
PCH & Paradise Cove Rd.	0.52	A	0.77	C	0.52	A	0.78	C	No

Bold text indicates intersection does not meet jurisdiction standards.
Source: JMD 2019.

At two of the stop-sign-controlled PCH intersections, at West Winging Way and Zuma View Place, operations would be significantly affected during the PM peak hour. In the AM peak hour, impacts would be less than significant at both intersections. In the PM peak hour, impacts would be less than significant at the other three intersections (at Meadows Court, East Winding Way, and Ramirez Mesa Road) (Table 3.17-11). The significant impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-11. Summary of Stop Sign-Controlled Intersection Operation with Improvement 5 Construction

Stop Sign-controlled Intersections	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
With Construction									
PCH & Meadows Ct.	0.48	A	0.72	C	0.58	A	1.36	**F**	**Yes**
PCH & East Winding Way	0.47	A	0.71	C	0.57	A	1.31	**F**	**Yes**
PCH & West Winding Way	0.50	A	0.77	C	0.60	A	1.44	**F**	**Yes**
PCH & Zuma View Pl.	0.49	A	0.76	C	0.61	B	1.43	**F**	**Yes**

Stop Sign-controlled Intersections	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
PCH & Ramirez Mesa Rd.	0.48	A	0.77	C	0.61	B	1.44	**F**	**Yes**
With Construction and Mitigation									
PCH & Meadows Ct.	0.48	A	0.72	C	0.48	A	0.73	C	No
PCH & East Winding Way	0.47	A	0.71	C	0.48	A	0.71	C	No
PCH & West Winding Way	0.50	A	0.77	C	0.51	A	0.78	C	No
PCH & Zuma View Pl.	0.49	A	0.76	C	0.50	B	0.77	C	No
PCH & Ramirez Mesa Rd.	0.48	A	0.77	C	0.49	B	0.78	C	No

Bold text indicates intersection does not meet jurisdiction standards.
Source: JMD 2019.

PCH and Topanga Beach Drive Waterline Improvements (Improvement 6)

PCH intersections would be affected by roadway construction traffic: five signalized and three stop sign-controlled intersections.

At all signalized intersections, operations would be significantly affected during PM peak hours. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-12. Summary of Signalized Intersection Operation with Improvement 6 Construction

Signalized Intersection	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
With Construction									
PCH & Carbon Canyon Rd.	0.57	A	0.75	C	0.98	**E**	1.43	**F**	**Yes**
PCH & Beach Access	0.60	A	0.75	C	0.97	**E**	1.43	**F**	**Yes**
PCH & Las Flores Cyn. Rd.	0.58	A	0.77	C	0.97	**E**	1.42	**F**	**Yes**

Signalized Intersection	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
PCH & Rambla Pacifico	0.58	A	0.74	C	0.96	**E**	1.39	**F**	**Yes**
PCH & Carbon Beach Estates	0.57	A	0.74	C	0.97	**E**	1.42	**F**	**Yes**
With Construction and Mitigation									
PCH & Carbon Canyon Rd.	0.57	A	0.75	C	0.59	A	0.77	C	No
PCH & Beach Access	0.60	A	0.75	C	0.61	B	0.77	C	No
PCH & Las Flores Cyn. Rd.	0.58	A	0.77	C	0.60	A	0.79	C	No
PCH & Rambla Pacifico	0.58	A	0.74	C	0.59	A	0.76	C	No
PCH & Carbon Beach Estates	0.57	A	0.74	C	0.59	A	0.76	C	No

Bold text indicates intersection does not meet jurisdiction standards.
Source: JMD 2019.

At all stop-sign-controlled intersections, operations would be significantly affected by construction during both AM and PM peak hours. The significant impacts would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-13. Summary of Stop Sign-Controlled Intersection Operation with Improvement 6 Construction

Stop Sign-controlled Intersections	Existing Peak Hour				With Project Peak Hour				Significant Impact?
	AM		PM		AM		PM		
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	
With Construction									
PCH & Tuna Canyon Rd.	0.62	B	0.75	C	0.88	**D**	1.44	**F**	**Yes**
PCH & Rambla Vista (West)	0.57	A	0.75	C	0.95	**E**	1.43	**F**	**Yes**
PCH & Rambla Vista (East)	0.55	A	0.73	C	0.94	**E**	1.38	**F**	**Yes**
With Construction and Mitigation									
PCH & Tuna Canyon Rd.	0.62	B	0.75	C	0.64	B	0.77	C	No
PCH & Rambla Vista (West)	0.57	A	0.75	C	0.58	A	0.77	C	No
PCH & Rambla Vista (East)	0.55	A	0.73	C	0.57	A	0.75	C	No

Bold text indicates intersection does not meet jurisdiction standards.
Source: JMD 2019.

Emergency Source of Water Supply Connection (Las Virgenes Connection) (Improvement 7)

Encinal Canyon Road would be affected by roadway construction traffic and lane closures for the Emergency Source of Water Supply Connection (Las Virgenes Connection). On this two-lane road, one lane would be closed in phases for construction of the Emergency Source of Water Supply Connection (Las Virgenes Connection). Construction-related increases in density at this roadway segment would be 106 percent; this would be a less-than-significant impact, as shown in Table 3.17-14. However, because this is a two-lane, bi-directional roadway, construction-related closure of one lane would result in hazardous conditions, which would be a significant impact. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-2**, requiring traffic control methodologies for two-lane roads.

Table 3.17-14. Summary of Roadway Operations with Improvement 7 Construction

Roadway Segment: 3525 Encinal Canyon Road **Improvement Affected:** Emergency Source of Water Supply Connection (Las Virgenes Connection)							
AM Peak Hour			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing							
1.7	A	59	2.3	A	86		
With Construction							
3.5	A	61	4.7	A	89	106%	No
With Construction and Mitigation							
1.8	A	61	2.4	A	89	3%	No

Source: JMD 2019.

Big Rock Bypass Improvements (Improvement 8)

PCH would be affected by roadway construction traffic and lane closures required for the Big Rock Bypass Improvements. On this four-lane, high-volume road, the outside southbound lane would be closed in phases during construction. Construction-related increases in density at this roadway segment would be 107 percent; this would be a significant impact in both the AM and PM peak hours, as shown in Table 3.17-15. This impact would be reduced to less-than-significant levels with implementation of **MM-TRA-1**, requiring travel lanes to remain open during non-construction periods, and **MM-TRA-3**, limiting construction periods to off-peak hours. Implementation Measure 6 in the Transportation and Infrastructure Element of the Malibu General Plan requires cooperation among the City, County, Sheriff, and Caltrans to limit and restrict hours of closure on PCH during repairs and construction. With **MM-TRA-1** and **MM-TRA-3**, the proposed improvements would comply with this policy. These mitigation measures would reduce the construction impacts to less-than-significant levels.

Table 3.17-15. Summary of Roadway Operations with Improvement 8 Construction

Roadway Segment: 19562 PCH **Improvement Affected:** Big Rock Bypass Improvements							
AM Peak Hour			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing							
23.7	C	1,866	27.3	D	2,089		
With Construction							
49.0	**F**	1,932	56.5	**F**	2,163	107%	**Yes**
With Construction and Mitigation							
24.5	C	1,932	28.3	D	2,163	4%	No

Bold text indicates roadway segment does not meet jurisdiction standards.
Source: JMD 2019.

Upper Encinal Tank Improvement (Improvement 9)

Encinal Canyon Road would be affected by roadway construction traffic for the Upper Encinal Tank Improvement. Due to very low volumes along this street segment, impacts would be less than significant during the AM and PM peak periods. To avoid disruptions within the residential streets where access to the tank site would be required, work hours should be limited to between 9 a.m. and 4 p.m. If lane closures are necessary during construction for equipment or materials delivery, proper flagging procedures should be employed. During non-construction periods, all travel lanes should remain open to through traffic.

Table 3.17-16. Summary of Roadway Operations with Improvement 9 Construction

Roadway Segment: 4400 Encinal Canyon Road **Improvement Affected:** Upper Encinal Tank Improvement							
AM Peak Hour			**PM Peak Hour**			**Project-related Increase in Density**	**Significant Impact?**
Density (pc/mi/hr)	**HCM LOS**	**Peak Hour Volume**	**Density (pc/mi/hr)**	**HCM LOS**	**Peak Hour Volume**		
Existing							
1.7	A	59	2.3	A	86		
With Construction							
3.4	A	60	4.7	A	87	103%	No

Source: JMD 2019.

Bicycle Facilities

Construction of pipelines within PCH (Improvements 3, 5, 6, and 8) would affect the Class III Bike Route on PCH. This would create increased hazardous conditions for bicycle riders where there would be insufficient right-of-way. This would be a significant impact on bicycle facilities. **MM-TRA-1** and **MM-TRA-3** would limit construction to off-peak hours where traffic would be significantly affected and would reduce the impacts on bicycle facilities. However, limiting construction to off-peak hours

would require nighttime construction. Nighttime construction is not allowed by the City of Malibu's Noise Ordinance (§§ 8.24.050 and 8.24.060), without written permission from the City Manager. Although the mitigation measures could reduce the construction impacts to less-than-significant levels, implementation may not be enforceable because this authorization is not under the control of the County. Implementation of **MM-TRA-5**, requiring accommodation of bike routes during construction, would reduce this impact to less-than-significant levels.

Pedestrian Facilities

Construction of pipelines within roadway rights-of-way may affect sidewalks and areas without sidewalks where the right-of way is used by pedestrians for walking, jogging, running, etc. (such as on Carbon Canyon Road, Carbon Mesa Road, Horseshoe Drive, and Encinal Canyon Road). This would create increased hazardous conditions for pedestrians where there would be insufficient right-of-way. This would be a significant impact on pedestrian facilities. **MM-TRA-1** would reduce the impacts on pedestrians. Implementation of this mitigation measure and **MM-TRA-6**, requiring accommodation of pedestrians during construction, would reduce this impact to less-than-significant levels.

Operation

After construction, all transportation facilities would be restored to preconstruction conditions and would not be changed from the existing conditions. Therefore, no operational impacts would occur.

Impact TRA-XVII.b.

Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subsection (b)?

No impact.

Section 15064.3 of the CEQA Guidelines, Determining the Significance of Transportation Impacts, describes specific consideration for evaluating a project's transportation impacts, especially as they relate to transit and nonmotorized travel. It says that "[g]enerally, vehicle miles traveled is the most appropriate measure of transportation impacts." This section applies to land use projects (§15064.3(b)(1)) and transportation projects (§15064.3(b)(2)). It also allows qualitative analysis under certain circumstances (§15064.3(b)(3)). Section 15064.3(c) states that the provisions of this section shall apply statewide starting July 1, 2020.

Because the proposed project is neither a land use project or a transportation project, traffic impacts are restricted to construction impacts only (operational maintenance traffic would be essentially the same as the existing conditions), and Section 15064.3 is not applicable statewide until after the publication of this Draft EIR, the proposed project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b).

Impact TRA-XVII.c.

Would the project substantially increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant.

Construction

Where construction takes place on curving, two-lane roadways in hilly terrain or within the roadway rights-of-way, impacts related to geometric design of the existing roads would occur. The following improvements would occur on these types of roadways: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements and Emergency Source of Water Supply Connection (Las Virgenes Connection). In addition, the Fernwood Tank Improvements would result in similar impacts, not because there would be construction in the Horseshoe Drive right-of-way, but because the large trucks and equipment would be accessing the site from this very narrow roadway with short sightlines. During these large vehicle moves, Horseshoe Drive would be temporarily closed, reducing this impact. Because of the low volumes on all these roadways (Carbon Canyon Road, Carbon Mesa Road, Encinal Canyon Road, and Horseshoe Drive), these hazards impacts would be less than significant. In addition, Mitigation Measures TRA-1, TRA-3, and TRA-4 would further reduce this impact.

Operation

After construction, all transportation facilities would be restored to preconstruction conditions and would not be changed from the existing conditions. Therefore, no operations impacts would occur.

Impact TRA-XVII.d.

Would the project result in inadequate emergency access?

Less than significant with mitigation.

See analysis in Section 3.20, *Wildfire*.

Construction

The project components include construction of pipelines in street rights-of-way, including PCH. During construction of pipelines, temporary road or lane closures could result in increased response times for police, fire, and other emergency vehicles (ambulances) because they may need to use less direct routes or deal with lane closures in responding to emergency calls in the project area. In addition, project construction may temporarily affect fire department vehicle access to streets, fire hydrants, or structures adjacent to the affected roadways. Temporary construction impacts on fire and police protection services and ambulances would be significant. However, with incorporation of **MM-TRA-1**, **MM-TRA-2**, **MM-TRA-3**, and **MM-TRA-4**, impacts would be less than significant.

Operation

After construction, all transportation facilities would be restored to preconstruction conditions and would not be changed from the existing conditions. Therefore, no operations impacts would occur.

3.17.3.3 Mitigation Measures

The following mitigation measure would be required to reduce traffic and transportation impacts to less-than-significant levels.

Mitigation Measure TRA-1: All Lanes Open during Non-construction Periods

This measure is applicable to the following improvements: all pipeline improvements (but not Fernwood Tank Improvements).

To reduce construction-related impacts related to roadway operations, all travel lanes will be opened during non-construction periods, with lanes maintained in a safe condition.

Mitigation Measure TRA-2: Construction Traffic Controls for Two-lane Roads

This measure is applicable to the following improvements: Carbon Canyon Road and Carbon Mesa Road Waterline Improvements, Coastline Drive 12-inch Waterline Improvements, and Emergency Source of Water Supply Connection (Las Virgenes Connection).

To reduce construction-related impacts related to roadway operations on two-lane roadways due to closure of one of the lanes necessary to remove and replace existing pipelines, traffic controls will be used during construction. These will include, at a minimum:

- Establishment of one-way traffic zones with adequate queuing areas for waiting traffic.
- Use of appropriate advance warning signs such as ROAD WORK AHEAD, LANE CLOSED AHEAD, ONE-WAY TRAFFIC AHEAD, FLAGGERS AHEAD, PREPARE TO STOP, or similar warnings at sufficient distance to slow traffic before queuing location.
- Flaggers positioned at either end of the one-way traffic zones at points of maximum visibility to stop traffic at a sufficient distance to prevent entrance into the work zone and to yield to opposing traffic.
- Channeling devices, such as cones or other traffic barriers.
- High-visibility safety apparel for flaggers in either fluorescent orange-red or fluorescent yellow-green, with reflective material, visible at a minimum distance of 1,000 feet.
- Hand-signaling devises, such as STOP/SLOW paddles, lights, and red flags.
- Illumination of flagger stations for nighttime work.
- Communication devices for flaggers at either end of the one-way traffic zones.

Mitigation Measure TRA-3: Limit Construction to Off-Peak Hours

This measure is applicable to the following improvements:

- *Coastline Drive 12-inch Waterline Improvements*
- *District 29 Creek Crossing Repairs*
- *PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)*
- *PCH and Topanga Beach Drive Waterline Improvements*
- *Big Rock Bypass Improvements*

In order to reduce peak-hour LOS impacts at affected locations, lane closures will occur only during off-peak hours, from 10 a.m. to 3 p.m. or from 9 p.m. to 5 a.m., with lanes restored to a safe condition during peak hours.

Mitigation Measure TRA-4: Traffic Controls for Full Roadway Closure

This measure is applicable to the Fernwood Tank Improvements.

To reduce construction-related impacts related to roadway operations on Horseshoe Drive with full roadway closure during construction when large trucks and other equipment are accessing the Fernwood Tank Improvements site, the following measures are required, at a minimum, before and during construction:

- Notification of neighbors to the site at least 48 hours in advance if street closure will affect their access or on-street parking. Notification will be hand delivered to the affected house and will include a contact person with email and phone number.
- Use of appropriate street closure signs positioned so that vehicles can make appropriate detours or U-turns.
- Appropriate high-visibility barriers to prevent vehicles from entering closed areas.

Mitigation Measure TRA-5: Accommodate Bike Route on PCH during Construction

This measure is applicable to the following improvements:

- *District 29 Creek Crossing Repairs*
- *PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)*
- *PCH and Topanga Beach Drive Waterline Improvements*
- *Big Rock Bypass Improvements*

To reduce impacts on the Class III bike route on PCH from closure of outside lanes, bicycle route detours will be provided whenever possible, preferably separated from traffic, with appropriate signage. When not possible, signs indicating that the bike route will be closed will be posted at least 1 week prior to closure.

Mitigation Measure TRA-6: Accommodate Pedestrians during Construction within Roadway Rights-of-Way

This measure is applicable to the following improvements: all improvements exact Fernwood Tank Improvement.

To reduce impacts on pedestrians from closure of outside lanes, safe pedestrian detours will be provided if sidewalks are blocked or unsafe during construction or if roadway rights-of-way without sidewalks are used for walking, jogging, or running.

3.17.3.4 Level of Significance after Mitigation

With implementation of **MM-TRA-1** through **MM-TRA-6**, impacts on transportation would be reduced to less-than-significant levels

3.18 Tribal Cultural Resources

This section provides an assessment of potential impacts on tribal cultural resources that could result from the project. The analysis in this section is based on the results of consultation with California Native American tribes conducted by LACDPW for the project, as required by CEQA as amended by Assembly Bill (AB) 52. Native American consultation materials are provided in Appendix A of this EIR. The County contacted the following tribal contact persons in accordance with AB 52:

- Lee Clauss, San Manuel Band of Mission Indians
- Andrew Salas, Chairman, Gabrieleno Band of Mission Indians-Kizh Nation
- Anthony Morales, Chief, San Gabriel Band of Mission Indians
- Octavio Escobedo, Tribal Chair, Tejon Indian Tribe

Only one response was received. On November 29, 2017, Jessica Mauck of the San Manuel Band of Mission Indians responded by email to state that the project was outside of the Serrano ancestral territory and, as a result, the tribe would not be requesting consulting party status with the County. None of the other tribes responded. Therefore, no California Native American tribes entered in AB 52 consultation. The County is continuing to inform the tribal contact persons of project changes since the last notifications.

Other cultural resources are included in Section 3.5, *Cultural Resources*. Some analysis and mitigation from that section are incorporated into this section, as referenced herein.

3.18.1 Environmental Setting

3.18.1.1 Tribal History before European Contact

Chumash

The District 29 project location is within the territory of the Chumash Native American Group. The Chumash occupied the region from approximately Morro Bay to Malibu Canyon on the coast, the four northern Channel Islands, and inland regions as far as the western edge of the San Joaquin Valley. They were able to exploit a prosperous environment on both land and sea.

The Chumash lived in large, dome-shaped homes made of willow branches. Whalebone was used to reinforce the roofs, which were made of tule mats. Inside, these houses were partitioned with hanging reed mats. Up to 50 people could live in one house. The Chumash used platform beds with storage areas under the beds.

The Chumash distinguished themselves as the finest boat builders among the California tribes. Pulling fallen Northern California redwood and driftwood from the sea, they built wood plank boats, called tomols, which they sealed with naturally occurring tar, called asphaltum. The Chumash also carved small dugout canoes by burning and scraping the centers of cedar logs, then filling the cavity with water and hot stone, making it easier to carve the wood. These boats were used mostly for transportation along the coast, up rivers, and out to the Channel Islands. They also used them for fishing and trading.

With abundant resources, the Chumash were one of the most advanced Native American groups in California in their culture, social organization, religious beliefs, and art and material object production. They were excellent craftsmen and known for well-made tools, bowls, and baskets. Bowls and carvings often featured representations of sea life, including orcas. They used soapstone, steatite (a talc mineral usually found in soapstone), sometimes inlaid with colorful abalone shells, for bowls and effigies. Flint, chert, and obsidian were used to make projectile points, drills, scrapers, choppers, and knives.

Baskets made by the Chumash were outstanding in workmanship and design. Baskets were used for gathering seeds, bulbs, and roots. Water was stored and carried in baskets that were waterproofed on the inside with asphaltum. Asphaltum was also used to caulk canoes (as described above), attach shell inlays to bowls, and fasten arrow and spear points to shafts.

Fishhooks were made of abalone shell. The major use for the shell, however, was for decoration. It was lavishly inlaid on stone, bone, and wood. The surface to be decorated received a coating of asphaltum onto which was pressed the shell inlay. Giant Pismo clams were used for beads and money. Many tiny drilled shell beads were manufactured for use as decoration and a means of exchange.

Bone was used by the Chumash in creating many artifacts. It was used extensively for necklaces, especially when long tubular beads were required. Flutes and whistles were also made of bone, usually deer tibia. Whalebone was used for many tasks.

Humaliwo village, which roughly translates to “where the surf sounds loudly,” was located at Malibu Lagoon. This was one of the most important Chumash villages along the coast, occupied from approximately 4,500 years before present (BP); only Muwu (Point Mugu) was larger. The name “Malibu” takes its name from this village, as the “Hu” was silent and the “maliwo” became Malibu.

As the Chumash culture advanced, their society became tiered and ranged from manual laborers to skilled crafters to chiefs and shaman priests. Women served equally in these high offices. Positions were also inherited. Caves in the Santa Monica Mountains were used for sacred religious ceremonies, with pigmented cave paintings of human figures and animal life. Many of these cave paintings exist today, protected by the National Parks Service.

Prior to European contact, the Chumash population was estimated at 22,000 (Santa Ynez Band of Chumash Indians 2009).

Tongva

The Tongva people are believed to have migrated to the greater Los Angeles area from the Sonora Desert in the southwestern U.S. approximately 3,000 to 5,000 years ago, though it is possible they arrived as early as 8,000 years ago. This history is well documented through 2,800 archaeological sites. They inhabited the Los Angeles basin, including Los Angeles and Orange counties, and the southern Channel Islands. (Gabrielino-Togva Tribe 2019.)

Prior to the arrival of Europeans, the Tongva were semi-nomadic and had access to abundant game and natural resources surrounding their villages in Southern California. They excelled at building homes and sea-worthy canoes. A Tongva hut, or ki, was usually constructed with tule or willow reeds and resembled a large dome in its design. The Tongva ki was very architecturally efficient because of its design, which gave it the structural stability to withstand an earthquake.

A Tongva canoe, or ti'at, was made of wooden planks sown together and caulked with tar or pine pitch and could hold 12 to 15 people. Ti'ats were used for fishing, hunting sea mammals, and transport to the islands that are now known as Catalina and the Channel Islands, so that the Tongva could trade efficiently with their northwestern neighbors the Chumash. The Tongva traded widely with other neighboring peoples, including the Acjachemen to the south (Gabrielino-Togva Tribe 2019).

Many Tongva villages were near streams and marshlands with abundant fishing sources. Most villages had hereditary chieftains with total authority over the community. Several had access to nearby hot springs for bathing. A large Tongva community resided in the area now known as the San Gabriel Valley. At the time of European contact, they may have numbered between 5,000 and 10,000 people (Haramokngna American Indian Cultural Center 2019).

3.18.1.2 European Contact

The first contact between Europeans and the coastal Chumash and Tongva began with Juan Rodriguez Cabrillo's voyage in 1542. He landed on Catalina Island, making the first recorded contact between the Spanish people and the Tongva (Welch 2006). He briefly anchored near Malibu Lagoon at the mouth of Malibu Creek to replenish his water supply. After a number of Chumash in canoes greeted his ship's arrival, he named the coastal stretch of land Pueblo de las Canoas (Village of the Canoes).

In 1769, a Spanish land expedition led by Gaspar de Portolá left Baja California and reached as far north as the Santa Barbara Channel. This interaction between Spanish explorers and the Chumash, Tongva, and other Native American societies marked the beginning of a major transformation in the lives of the Native American population.

Chumash

The Portolá expedition led to the establishment of five Spanish missions within Chumash territory. The Chumash population was eventually decimated, largely through the introduction of European diseases. In 1821, Mexico gained independence from Spain. By 1831, the number of mission-registered Chumash numbered only 2,788. After the secularization of mission lands in 1834, lands formerly under mission control were given to Spanish families loyal to the Mexican government and large tracts of land were sold to prominent individuals as land grants. Although the Mexican authorities promised to distribute the remaining lands to the surviving Chumash, they failed to live up to these promises, causing further decline in the Chumash population.

The Chumash reservation was established in 1901, encompassing 127 acres. No native Chumash speak their own language since Inesño, the last speaker died, in 1965. Today, the Chumash are estimated to have a population of 5,000. Many current members can trace their ancestors to the five islands of Channel Island National Park. The Chumash include 14 separate bands. The Malibu Chumash, from the coast of Malibu, have descendants that can now be found among other bands, including the Ventura, Coastal, Tejon, and San Fernando Valley Bands. Only the Santa Ynez Band and Tejon Band are recognized by the federal government.

Tongva

In 1771, Mission San Gabriel was founded to the east of the Malibu Coast, and Native American villages throughout the Los Angeles Basin were encouraged or forced to move away from their old habitation areas and congregate at the new mission. The name Gabrielino was attached by the Spanish to the Tongva living around these mission, with some populations known to this day as Gabrielino/Tongva

and Gabrieleno-Tongva, while others prefer the original Tongva name. In addition, exposure to Old World diseases led to a rapid collapse of the Tongva population. At times the Tongva violently resisted Spanish rule.

In 1821, Mexico gained independence from Spain and the government sold mission lands to ranchers, forcing Tongva to culturally assimilate. Three decades later, California was ceded to the U.S. following the Mexican-American War. The U.S. government signed treaties with the Tongva, promising them 8.5 million acres of land for reservations, but these treaties were never ratified. By the twentieth century, the island Tongva population had disappeared and the mainland communities were nearing extinction.

The contemporary Tongva community is made up of several diverse groups that support and advocate for Tongva cultural heritage throughout the Los Angeles area and beyond. The Gabrieliño/Tongva are recognized by the State of California and are seeking recognition from the U.S. government.

3.18.2 Regulatory Setting

Additional regulations applying more generally to archaeological resources and human remains are found in Section 3.5, *Cultural Resources*.

3.18.2.1 Federal

Native Indian Religious Freedom Act

This act (42 USC 1996) protects Native American religious practices, ethnic heritage sites, and land uses.

Native American Grave Protection and Repatriation Act of 1990

This act (25 USC 3001 et seq.) defines "cultural items," "sacred objects," and "objects of cultural patrimony"; establishes an ownership hierarchy; provides for review by the Reviewing Committee; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.

3.18.2.2 State

Assembly Bill 52

AB 52, signed into law on September 25, 2014, requires lead agencies to evaluate a project's potential to affect tribal cultural resources and establishes a consultation process for California Native American tribes as part of CEQA. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California Register of Historical Resources (California Register) or included in a local register of historical resources. AB 52 also gives lead agencies the discretion to determine whether a resource qualifies as a tribal cultural resource on the basis of criteria for listing in the California Register. The lead agency must support such a determination with substantial evidence. Written notice of a proposed project and a 30-day window to request consultation is to be provided to a California Native American tribe that has previously requested it and that is traditionally and culturally affiliated with the geographic area of a proposed project.

Public Resources Code, Section 5097.94

Public Resources Code (PRC) Section 5097.94 establishes the Native American Heritage Commission (NAHC) and provides that NAHC has powers and duties, including the following:

- To identify and catalog places of special religious or social significance to Native Americans and known graves and cemeteries of Native Americans on private lands
- To make recommendations relative to Native American sacred places that are on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans for acquisition by the State or other public agencies for the purpose of facilitating or ensuring access thereto by Native Americans
- To bring an action to prevent severe and irreparable damage, or ensure appropriate access for Native Americans, to a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine on public property

Additionally, upon notification from a county coroner that Native American human remains have been discovered, NAHC must notify the most likely descendant (MLD) of the deceased Native American. The MLD(s), with landowner permission, may inspect the discovery of the Native American remains and may recommend an approach for the "treating or disposing, with appropriate dignity, the human remains and any associated grave goods." Section 5097.98 provides deadlines for this process. If there is no MLD, or no agreement with the MLD's recommendation, the remains may be reinterred "with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Native American Historic Resource Protection Act

This act (PRC Section 5097.993 et seq.) prohibits vandalism of Native American historic, cultural, or sacred sites.

3.18.2.3 Local and Regional

Los Angeles County General Plan

The Los Angeles County General Plan Conservation and Natural Resources Element lists the following goals and policies applicable to the proposed project (Los Angeles County 2015).

> **Policy C/NR 14.4**: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

3.18.3 Impacts and Mitigation

3.18.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 or in a local register of historical resources as defined in PRC Section 5020.1(k).

- Potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.18.3.2 Impacts

Impact TCR-XVIII.a.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 or in a local register of historical resources as defined in PRC Section 5020.1(k)?

Less than significant with mitigation.

For purposes of impact analysis, a tribal cultural resource is considered a site, feature, place, cultural landscape, sacred place, or object of cultural value to a California Native American tribe and is either on or eligible for the California Register or a local historic register.

As discussed above, the County sent notification letters on November 22, 2017, to the California Native American tribes that requested inclusion on the County's AB 52 notification list. No responses were received except from the San Manuel Band of Mission Indians, saying that the project was outside their ancestral territory.

Table 3.5-3 in Section 3.5, *Cultural Resources*, lists known archaeological sites that are within 100 feet of the proposed project's area of potential effects. These sites are believed to date to before European contact.

Construction

Earthwork required for replacement and installation of pipelines and tanks could affect subsurface cultural or tribal cultural resources. Ground disturbances during construction would potentially fracture, crush, demolish, and/or relocate archaeological/tribal cultural materials present at project sites. This would adversely alter archaeological resources potentially California Register–eligible, and adversely alter their immediate surroundings, such that the significance of the resources could be materially impaired. Although areas with ground-disturbing activities have all been disturbed before, there still is the potential to encounter archaeological/tribal cultural resources. Therefore, impacts related to substantial adverse change of significant archaeological/tribal cultural resources are considered significant. Mitigation Measures CUL-1 and CUL-2 in Section 3.5, *Cultural Resources*, would be implemented to reduce potential impacts to less-than-significant levels. For the creek crossings replacements included in the proposed project, all construction would occur on and from existing bridges and would not include ground disturbance. No impacts related to a substantial adverse change of a significant archaeological/tribal cultural resource would occur at these locations.

Operation

Operation of the District 29 facilities would require periodic maintenance by LACDPW personnel, similar to existing conditions. Inspection and maintenance activities would not require earthwork. Therefore, operation of these facilities would have no impacts related to a substantial adverse change of a significant archaeological/tribal cultural resource.

Impact TCR-XXIII.b.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 PRC 5024.1? In applying the criteria set forth in subdivision (c) of PRC 5024.1 1, the lead agency shall consider the significance of the resource to a California Native American tribe?

No impact.

Construction

Earthwork during construction would potentially fracture, crush, demolish, and/or relocate archaeological/tribal cultural materials present at project sites, as described in Impact XVIII.a. Therefore, impacts related to a substantial adverse change of a significant archaeological/tribal cultural resource are considered significant. Mitigation Measures CUL-1 and CUL-2 in Section 3.5, *Cultural Resources*, would be implemented to reduce potential impacts to less-than-significant levels. For the creek crossings replacements included in the proposed project, all construction would occur on and from existing bridges and would not include ground disturbance. No impacts related to a substantial adverse change of a significant archaeological/tribal cultural resource would occur at these locations.

Operation

Operation of the District 29 facilities would require periodic maintenance by LACDPW personnel, similar to existing conditions. Inspection and maintenance activities would not require earthwork. Therefore, operation of these facilities would have no impact related to a substantial adverse change of a significant archaeological/tribal cultural resource.

3.18.3.3 Mitigation Measures

Mitigation Measures **CUL-1** and **CUL-2** in Section 3.5, *Cultural Resources*, are also applicable to tribal cultural resources. Implementation of these mitigation measures would reduce impacts to less-than-significant levels.

3.18.3.4 Level of Significance after Mitigation

With implementation of **MM-CUL-1** and **MM-CUL-2**, impacts to tribal cultural resources would be reduced to less-than-significant levels.

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3.19 Utilities and Service Systems

This section discusses the environmental setting of the existing utilities and service systems in the project area and examines the potential impacts of the proposed project on these services. Impacts are assessed in terms of the effects on the physical environment or demands for new or expanded utilities and service systems.

Through the proposed project, Waterworks intends to provide a more reliable water system for the existing District 29 area. The proposed project improvements that could result in utilities impacts are the following: (1) construction of one new tank reservoir, (2) replacement of approximately 34,300 feet of underground water pipeline, (3) construction of approximately 6,300 feet of new underground pipeline, and (4) repair of several creek crossing locations.

3.19.1 Environmental Setting

3.19.1.1 Water Supply

Water is conveyed to the project study area by District 29, with wholesale supplies purchased from West Basin Municipal Water District. West Basin Municipal Water District imports its supplies predominantly from the Metropolitan Water District of Southern California, which, in turn, obtains its water from the State Water Project and the Colorado River.

The District 29 water service area consists of the city of Malibu and the unincorporated area of Topanga. District 29 has seven emergency interconnections: four with the City of Los Angeles Department of Water and Power and three with Las Virgenes Municipal Water District. District 29 occupies an area of approximately 47 square miles and was created in 1959 (LACDPW 2017). District 29 served an estimated population of 30,808 in 2015. District 29 projects a total demand of 10,130 acre-feet of water in 2020 and 10,600 acre-feet of water in 2035.

3.19.1.2 Wastewater

There is no municipal sewer in the city of Malibu or the neighboring unincorporated portions of Los Angeles County because most wastewater is treated and disposed of on site. The City of Malibu Wastewater Management Program administers permitting, plan review, and oversight programs for onsite wastewater treatment systems. The vast majority of existing developed properties in Malibu are served by an onsite wastewater treatment system, which consists of a septic tank(s) that receives wastewater from a building and discharges the effluent into a subsurface dispersal area, consisting of a leach field or seepage pit. The Malibu Wastewater Management/Environmental Health department reviews and ensures that proposed uses of new or existing systems are compliant with requirements for protection of public health and the environment (Malibu 2018). The County of Los Angeles Department of Public Health has a similar process in areas within the County's jurisdiction (LACDPW 2019).

3.19.1.3 Stormwater Drainage

There are no stormwater drainage systems in the project area. Typically, stormwater runoff generated within the project area drains into local streets and mostly makes its way to the ocean. See Section 3.10, *Hydrology and Water Quality*.

3.19.1.4 Solid Waste

Solid waste disposal in the city of Malibu and the unincorporated parts of Los Angeles County in the Topanga area is handled by several hauling companies, each of which deliver solid waste to the Calabasas Landfill, which is owned and operated by the Los Angeles County Sanitation District (Malibu 2017; LACDPW 2019).

3.19.1.5 Energy

Electricity

Southern California Edison provides electricity to the project area via three primary stations and three secondary stations. As one of the nation's largest electric utilities, Southern California Edison delivers power to more than 14 million people. Its service area of approximately 50,000 square miles spans central, coastal, and Southern California.

Natural Gas

Southern California Gas Company provides natural gas to the project area. Southern California Gas Company is the nation's largest natural gas distribution utility, providing service to 20.9 million consumers through 5.8 million meters in more than 500 communities. The company's territory encompasses approximately 20,000 square miles of diverse terrain throughout central and Southern California, from Visalia to the Mexican border.

3.19.2 Regulatory Setting

See Section 3.10, *Hydrology and Water Quality*, for applicable stormwater management regulations and Section 3.6, *Energy,* for applicable energy regulations.

3.19.2.1 Federal

There are no federal regulations that are directly relevant to an analysis of the proposed project's utilities and service systems impacts under CEQA.

3.19.2.2 State

California Urban Water Management Planning Act

Urban Water Management Plans are prepared by the California urban water suppliers that serve 3,000 or more connections or provide over 3,000 acre-feet of water annually to support their long-term resource planning and ensure that adequate water supplies are available to meet existing and future water demands. The *2015 Urban Water Management Plan for Los Angeles County Waterworks District 29, Malibu, and Marina del Rey Water Systems* covers the project area (LACDPW 2017).

California Energy Commission

The California Energy Commission is the State's principal energy policy and planning organization. The California Energy Commission has five major responsibilities: (1) forecasting future energy needs and maintaining historical energy data, (2) licensing 50-megawatt or larger thermal power plants, (3) promoting energy efficiency through appliance and building standards, (4) developing energy technologies and supporting renewable energy, and (5) planning for and directing the State's response to energy emergencies. The California Energy Commission has been directed by the State legislature to manage energy research and renewable energy programs in the wake of electricity industry restructuring or deregulation.

Senate Bill 1389 (Chapter 568, Statutes of 2002) requires the commission to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors. The report is also charged with providing policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The 2019 *Integrated Energy Policy Report* is the current version.

California Integrated Solid Waste Management Act

In September 1989, the California Integrated Solid Waste Management Act (also known as Assembly Bill 939) was passed. Assembly Bill 939 required each city in the State to divert at least 25 percent of its solid waste from landfill disposal through source reduction, recycling, and composting by the end of 1995. By 2000, cities were required to divert at least 50 percent of their waste stream from landfills. Assembly Bill 939 further required each city to conduct a solid waste generation study and prepare an annual source reduction and recycling plan to describe how it will reach its goals.

California Public Utility Commission

The California Public Utility Commission regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. The California Public Utility Commission's Energy Division sets electric rates, protects consumers, and promotes energy efficiency, electric system reliability, and utility financial integrity. The commission regulates local natural gas distribution facilities and services, natural gas procurement, intrastate pipelines, and intrastate production and gathering. It works to provide opportunities for competition when, in the interest of consumers, it takes the lead in environmental review of natural gas–related projects, recognizes the growing interaction of electric and gas markets, and monitors gas energy efficiency and other public purpose programs.

3.19.2.3 Local and Regional

City of Malibu General Plan Conservation Element

- **CON Objective 3.1**: Use of innovation, energy efficient techniques, and systems.
- **Policy 3.1.2**: The City shall encourage state-of-the-art energy efficiency standards for all new construction design.
- **Policy 3.1.3**: The City shall protect solar access.
- **CON Objective 4.1**: Ten percent reduction in the amount of water for residential and commercial uses by 2001 and a three-day emergency water supply in all residential areas.
- **Policy 4.1.1**: The City shall provide water for residents' needs in the most cost-effective manner.

- **Policy 4.1.2**: The City shall coordinate development to ensure adequate water supplies.
- **Policy 4.1.3**: The City shall encourage water conservation design measures in residential, commercial, and industrial development.
- **CON Objective 5.1**: Fifty percent reduction in the amount of solid waste generated by the community and disposed of in landfills by 2000.
- **Policy 5.1.1**: The City shall reduce solid waste.
- **Policy 5.1.2**: The City shall encourage recycling.

City of Malibu General Plan Circulation and Infrastructure Element

The City's General Plan Circulation and Infrastructure Element includes goals, policies, and implementation measures for environmentally sensitive, cost-effective, and safe service infrastructure. The objectives and policies are described below:

- **C Objective 2.1**: Contamination and pollution from waste disposal reduced to the maximum extent possible by 2000.
- **Policy 2.1.2**: The City shall protect the quality of surface and groundwater.
- **Policy 2.1.3**: The City shall minimize ecological damage and public health hazards from waste disposal.

County of Los Angeles General Plan 2035

The County's General Plan includes goals and policies applicable to the proposed project in Chapter 13, Public Services and Facilities. The goals and policies are described below.

- **Goal PS/F 1**: A coordinated, reliable, and equitable network of public facilities that preserves resources, ensures public health and safety, and keeps pace with planned development.
- **Policy PS/F 1.4**: Ensure the adequate maintenance of infrastructure.
- **Goal PS/F 6**: A County with adequate public utilities.
- **Policy PS/F 6.1**: Ensure efficient and cost-effective utilities that serve existing and future needs.
- **Policy PS/F 6.4**: Protect and enhance utility facilities to maintain the safety, reliability, integrity, and security of utility services.

3.19.3 Impacts and Mitigation

3.19.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects.
- Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

- A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Generation of solid waste in exceedance of State or local standards or in excess of the capacity of local infrastructure, or other impediment to the attainment of solid waste reduction goals.
- Failure to comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

3.19.5 Impacts

Impact UT-XIX.a.

Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Significant and unavoidable.

The proposed project would involve the replacement of two existing reservoir tanks with one tank, replacement of approximately 34,300 feet of pre-existing underground water pipeline, and construction of approximately 6,300 feet of new underground pipeline and an emergency connection. These improvements would provide a more reliable water system for customers within the District 29 area. The proposed project would not include new or substantially expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Water pipeline capability would increase, and tank capacity would be expanded, but these improvements would not result in any significant growth because they would only address existing development and current fire flow needs. The purpose of the project is to meet existing needs, not to increase capacity to the extent that it would lead to growth.

The proposed project would not require relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, beyond those proposed by the project. Environmental effects of the replacement and new facilities are discussed throughout Chapter 3.

Construction

Pipeline Replacements

Pipeline replacements would slightly expand the water facilities. Construction would require ground disturbance in the form of shallow excavations, which would result in environmental impacts, as discussed throughout Chapter 3. For some pipeline replacements, significant construction-related impacts would occur, but they would be mitigated to less-than-significant levels with incorporation of the following mitigation measures applicable to pipeline replacements:

- **MM BIO-1** through **MM BIO-19** in Section 3.4, *Biological Resources*
- **MM CUL-1** through **MM CUL-3** in Section 3.5, *Cultural Resources*
- **MM GEO-2** and **MM GEO-3** in Section 3.7, *Geology, Soils, and Paleontological Resources*
- **MM HAZ-1** through **MM HAZ-4** in Section 3.9, *Hazards and Hazardous Materials*
- **MM NOI-2** in Section 3.13, *Noise*

- **MM TRA-1**, **MM TRA-2**, **MM TRA-3, MM TRA-5**, and **MM TRA-6** in Section 3.17, *Transportation*

For the following pipeline replacements, significant construction-related impacts would occur:

- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road)
- PCH and Topanga Beach Drive Waterline Improvements
- Big Rock Bypass Improvements

With implementation of **MM TRA-3** in Section 3.17, *Transportation,* allowing construction in Malibu during nighttime hours, noise impacts related to this nighttime construction would be significant. **MM NOI-1** would reduce these impacts, but not to less-than-significant levels; therefore, short-term impacts related to nighttime construction noise would be significant and unavoidable.

Crossing Repairs

Construction activities associated with the repair of crossings attached to bridges would not represent an expansion of water facilities. Therefore, there would be no impacts related to construction or expansion of water facilities.

New Pipeline

The Emergency Source of Water Supply Connection (Las Virgenes Connection) would represent an expansion of water facilities, although the intent is to provide a back-up for an existing pipeline. Construction would require ground disturbance in the form of shallow excavations, which would result in environmental impacts, as discussed throughout Chapter 3. Significant construction-related impacts would occur, but they would be mitigated to less-than-significant levels with incorporation of the following mitigation measures:

- **MM BIO-1** through **MM BIO-19** in Section 3.4, *Biological Resources*
- **MM CUL-2** and **MM CUL-3** in Section 3.5, *Cultural Resources*
- **MM GEO-1** through **MM GEO-3** in Section 3.7, *Geology, Soils, and Paleontological Resources*
- **MM HAZ-1** through **MM HAZ-4** in Section 3.9, *Hazards and Hazardous Materials*
- **MM-NOI-1** and **NOI-2** in Section 3.13, *Noise*
- **MM TRA-1**, **MM TRA-2**, and **MM TRA-6** in Section 3.17, *Transportation*

Impacts related to the Emergency Source of Water Supply Connection (Las Virgenes Connection) would be less than significant with mitigation.

Tank Replacements

Replacement of the Fernwood and Upper Encinal Tanks would expand the water-holding capacity in District 29. Construction activities associated with the tank replacement would require demolitions, grading, and installation of the new tanks, which would result in environmental impacts as discussed throughout Chapter 3. Significant construction-related impacts would occur, but they would be mitigated to less-than-significant levels with incorporation of the following mitigation measures:

- **MM BIO-1** through **MM BIO-19** in Section 3.4, *Biological Resources*
- **MM CUL-2** and **MM CUL-3** in Section 3.5, *Cultural Resources*
- **MM GEO-1** through **MM GEO-3** in Section 3.7, *Geology, Soils, and Paleontological Resources*

- **MM HAZ-1** through **MM HAZ-4** in Section 3.7, *Hazards and Hazardous Materia*
- **MM NOI-1** and **MM NOI-2** in Section 3.13, *Noise*
- **MM TRA-1**, **MM TRA-4**, and **MM TRA-6** in Section 3.17, *Transportation*

Impacts related to the Fernwood Tank Improvement and the Upper Encinal Tank Improvement would be less than significant with mitigation.

Operation

Operation of the project would not require or result in additional relocation or construction of new utility services and, therefore, no environmental effects would occur.

Impact UT-XIX.b.

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

No impact.

Construction

Water is likely to be used during construction of some of the improvements in the proposed project (with the exception of the crossing repairs) to prevent dust from becoming airborne, clean construction equipment, mix concrete, or meet other construction-related needs. Water use during the construction phase would be short term, and would cease with the completion of construction. Construction activities associated with the proposed project would vary in duration and start times based on type of construction but would occur over a 6-year span, from approximately 2021 to 2026. Construction activities would not require additional water treatment facilities, supplies, or entitlements and all construction-related water demands would cease upon construction completion. Therefore, no impacts would occur.

Operation

Typical operations associated with the proposed project include testing and monitoring water quality; regulating water pressure; and inspecting pump stations, reservoirs, and pressure control stations over the life of these facilities. Maintenance activities to be conducted include repair of control valves and pumps, controls, and fixtures; vegetation control, including clearing and grubbing of leaves and debris; and tank/pump interior and exterior recoating. Additionally, pipelines may be accessed for water quality testing and monitoring, shutoff, recoating, or other damage assessment and repairs. This water use would be essentially the same as under the existing condition, which also uses water in this manner. None of the operational or maintenance activities described would require additional water treatment facilities, supplies, or entitlements. No impacts would occur.

Impact UT-XIX.c.

Would the project result in a determination by the wastewater treatment provider that 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?

No impact.

Construction

During construction, crews would use portable lavatories at construction sites and staging sites, resulting in minimal wastewater discharge. Construction wastewater demand would be minimal and would not affect the local wastewater treatment capacity. No impacts would occur.

Operation

Wastewater discharges would not occur as part of the operation of the proposed project; therefore, no impacts would occur.

Impact UT-XIX.d.

Would the project 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?

Less than significant.

Construction

As previously described, construction activities associated with proposed project improvements would require some ground disturbance in the form of shallow excavations and grading. Because pipeline improvements would occur in a limited footprint, the proposed project is not expected to disturb significant amounts of soil. Grading would occur as part of tank construction, but it is expected that the grading would not require the export of significant quantities of soil. In addition, some of the material excavated during construction would be re-used (depending on the quality and cleanliness of the material, determined by construction contractor), further decreasing the amount of solid waste produced. Tank demolition would result in small amounts of building material, most of which would be salvaged. Impacts would be less than significant.

Operation

Solid waste would not be produced during operation of the proposed project; therefore, no impacts would occur.

Impact UT-XIX.e.

Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Less than significant.

As mentioned under Impact UT-XIX.d, the proposed project would not disturb significant amounts of soil, and some of the material excavated during construction would be re-used, further decreasing the amount of solid waste produced. Because the amount of solid waste produced would not be significant, the proposed project would not be in violation of any federal, State, or local management and reduction statutes and regulations. Impacts would be less than significant.

Operation

Solid waste would not be produced during operation of the proposed project; therefore, no impacts would occur.

3.19.6 Mitigation Measures

The District 29 improvements would result significant impacts to the environment related to the construction of new or expanded water facilities. The following mitigation measures, from other sections in this EIR, are required to address these impacts:

From Section 3.4, *Biological Resources*:

- **MM BIO-1**: Environmentally Sensitive Area Fencing.
- **MM BIO-2**: Pesticides.
- **MM BIO-3**: Clean Construction Area.
- **MM BIO-4**: Preconstruction Nesting Bird Survey.
- **MM BIO-5**: Noise Control.
- **MM BIO-6**: Nighttime Construction.
- **MM BIO-7**: Pets.
- **MM BIO-8**: Plant Surveys.
- **MM BIO-9**: Invasive Weed Avoidance.
- **MM BIO-10**: Dust Control.
- **MM BIO-11**: Certified Arborist.
- **MM BIO-12**: Coastal Development Permit.
- **MM BIO-13**: Spoils and Rubble.
- **MM BIO-14**: Equipment Maintenance.
- **MM BIO-15**: Stormwater Pollution Prevention Plan.
- **MM BIO-16**: Slope Protection.
- **MM BIO-17**: Preconstruction Training.
- **MM BIO-18**: Jurisdictional Waters and Riparian Vegetation.
- **MM BIO-19**: Wildlife Movement.

From Section 3.5, *Cultural Resources:*

- **MM CUL-1**: Cultural Resources Monitoring Program.
- **MM CUL-2**: Discovery of Unknown Cultural Resources.
- **MM CUL-3**: Discovery of Human Remains.

From Section 3.7, *Geology, Soils, and Paleontological Resources:*

- **MM GEO-1**: Site-Specific Expansive Soil Testing and Design.
- **MM GEO-2**: Site-Specific Expansive Soil Testing and Design.
- **MM GEO-3**: Paleontological Documentation and Recovery.

From Section 3.9, *Hazards and Hazardous Materials:*

- **MM HAZ-1**: Soil Screening and Soil Management Plan.
- **MM HAZ-2**: Contaminated Groundwater Management.
- **MM HAZ-3**: Trench Slurry.

- **MM HAZ-4**: Contaminated Soil Disposal.

From Section 3.13, *Noise:*

- **MM NOI-1:** Construction Noise Reduction.
- **MM NOI-2**: Construction Vibration Reduction.

From Section 3.17, *Transportation:*

- **MM TRA-1**: All Lanes Open during Non-construction Periods.
- **MM TRA-2**: Construction Traffic Controls for Two-lane Roads.
- **MM TRA-3**: Limit Construction to Off-Peak Hours.
- **MM TRA-4**: Traffic Controls for Full Roadway Closure.
- **MM TRA-5**: Accommodate Bike Route on PCH during Construction.
- **MM TRA-6**: Accommodate Pedestrians during Construction within Roadway Rights-of-Way.)

3.19.7 Level of Significance after Mitigation

With implementation of mitigation measures listed above, most environmental impacts would be reduced to less-than-significant levels. Because implementation of MM TRA-3 would result in nighttime construction, significant and unavoidable impacts related to construction noise would remain for short periods of time at some locations along PCH.

3.20 Wildfire

This section addresses wildfire threats, emergency plans, and post-fire threats.

3.20.1 Environmental Setting

3.20.1.1 Wildfires

Wildland-Urban Interface

Wildland fires are inevitable and part of the natural regeneration cycle of the native California landscape. According to the California Governor's of Office of Emergency Services (Cal OES), a wildfire is defined as any free-burning vegetative fire that initiates from an unplanned ignition, whether natural (e.g., lightning) or human-caused (e.g., power lines, mechanical equipment, escaped prescribed fires), where the management objective is full suppression. While wildfires can potentially lead to benefits to an ecosystem if within the range of natural variability for a given ecotype and geographical area, they can also lead to deleterious effects on both the natural and built environment (Cal OES 2018).

Fire science distinguishes between two types of wildfires: "wildland" fires, which burn predominantly in undeveloped areas, and "wildland-urban interface" (WUI) fires. The WUI is characterized by the intersection of the natural and the built environments and has been defined as the area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. (Cal OES 2018) Malibu is situated in the WUI (Malibu 2017).

WUI fires represent an increasingly significant concern in California. California has a chronic and destructive WUI fire history with significant losses of life, structures, infrastructure, agriculture, and businesses. Most WUI fires are suppressed before they exceed 10 acres; however, even relatively small-acreage WUI fires may result in disastrous damage. The remainder usually occur during episodes of hot, windy conditions. The pattern of increased damages is directly related to increased urban spread into areas that have historically had wildfire as part of the natural ecosystem. Most local governments that have submitted Local Hazard Mitigation Plans (LHMPs) have identified fire and WUI fires as specific hazards. Los Angeles County's LHMP includes mitigation goals and strategies that cross political boundaries.

All of the District 29 area in Los Angeles County is considered an extreme fire hazard zone, particularly from brush fires, by the California Department of Forestry and Fire Protection (CAL FIRE) and the Los Angeles County Fire Department (LACoFD) (Cal OES 2018). The City of Malibu has adopted the same designation within the city (Malibu 2017).

There are wildland fires in the greater Malibu area on a regular basis, usually every 10 to 30 years. Major fires in the area during the last 12 years have included the following (Stiles et al. 2018):

- Woolsey Fire, 2018: 96,949 acres burned (largest recorded)
- Corral Fire, 2007: 4,708 acres burned
- Canyon Fire, 2007: 3,839 acres burned
- Pacific Fire, 2003: 806 acres burned

- Calabasas Fire, 1996: 12,518 acres burned

3.20.1.2 Climate Change and Wildfire Hazard

Climate change has the potential to alter wildfire hazards in frequency, size, and severity beyond the historical range by increasing the length of the fire season, creating drier fuels, decreasing forest health, and altering ignition patterns. The Fourth National Climate Assessment, authored by the federally required U.S. Global Change Research Program, states that in the western U.S., particularly in California, wildfires have become more frequent and larger. Trends for both the amount of area burned and the suppression costs of fighting these fires show a fourfold increase between 1985 and 2015. The duration of the wildfire season has also increased throughout the western U.S. as a result of increased temperature, among other climate change stressors. The Fourth National Climate Assessment predicts that the annual area burned will continue to increase, somewhere between two and six times the present condition (U.S. Global Change Research Program 2018).

The California Climate Adaptation Strategy (2013 Update) and the Climate Adaptation Strategy (2018 Update, Safeguarding California Plan) describe the ways in which climate change alters some of the primary factors that govern wildfire behavior: weather, fuels, and topography. While climate change does not affect topography, weather (wind, temperature, etc.) and fuels (vegetation type, amount, and moisture) are influenced by climate change (Cal OES 2018).

LACoFD states that climate change has made the fire season in the county to be year-round with an ever-growing number of wildfires each year (LACoFD 2019a).

3.20.1.3 Fire Protection

Wildfire Protection Responsibilities

Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. The entire state is classified as either Local Responsibility Areas (LRAs), State Responsibility Areas (SRAs), or Federal Responsibility Areas (FRAs) (Cal OES 2018).

LRAs include land within incorporated cities, cultivated agriculture lands, non-flammable areas in unincorporated areas, and those lands that do not meet the SRA or FRA criteria, described below. LRA fire protection is typically provided by city fire departments, fire protection districts, and counties, and by CAL FIRE under contract to local governments.

SRAs are those lands in which the State of California has primary fire protection responsibilities. These are areas where CAL FIRE has legal and financial responsibility for wildland fire protection and where CAL FIRE administers fire hazard classifications and building standard regulations. SRAs are defined as lands that (1) are county unincorporated areas, (2) are not federally owned, (3) have wildland vegetation cover rather than agricultural or ornamental plants, (4) have watershed and/or range/forage value, and (5) have housing densities not exceeding three units per acre. Where SRAs contain built environment or development, the responsibility for fire protection of those improvements (non-wildland) is typically that of a local government agency.

FRAs are fire-prone wildland areas that are owned or managed by a federal agency such as the U.S. Forest Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, or U.S. Department of Defense. Primary financial and rule-making jurisdictional authority rests with the federal land agency. In many instances, FRAs are interspersed with private land ownership or leases. Fire protection for developed private property is usually not the responsibility of the federal land

management agency; structural protection responsibility is that of a local government agency or fire protection district.

Malibu Fire Protection

Malibu, within the city limits, is mostly within the LRA designation, except for federally owned lands that are part of the Santa Monica Mountains National Recreation Area, which are within FRAs. All of the District 29 project area within the city is in the LRA; none is in the FRA. The portion of the project area outside the city limits is in the SRA.

The City of Malibu contracts with LACoFD to provide fire protection within the city limits of Malibu and often in the surrounding areas, even in the SRA and FRAs. (For more information related to LACoFD, see Section 3.15, *Public Services*.) However, under the California Master Mutual Aid Agreement, CAL FIRE assists other fire departments within the State when its resources are available, regardless of the fire's location. In turn, CAL FIRE can access the local government fire departments through the same agreement for assistance in wildland fire suppression. When wildland fires rage across the State, stretching thin all local and State resources, CAL FIRE has agreements to provide California National Guard resources, including C-130 aircraft, helicopters, support personnel, communications equipment, and other specialized resources. During the fall 2018 fires, fire crews from 17 states came to the aid of California firefighters. This mutual aid goes both ways; LACoFD provided fire crews to Washington State in August 2018 (CAL FIRE 2019).

Declarations of Emergency

Local governments can receive assistance from the State or federal government through the declaration of an emergency. To request state assistance, a declaration of local emergency must occur first; then the local government can request a Governor's Proclamation of a State Emergency. (A local emergency proclamation or a Governor's Proclamation is not a prerequisite for mutual aid assistance.) The Governor's Proclamation authorizes State financial relief for emergency actions and restoration of public facilities and infrastructure. A Governor's Proclamation is required before requesting a federal declaration.

There are two types of federal declarations: a Presidential Declaration of an Emergency and a Presidential Declaration of a Major Disaster. An emergency declaration supports response activities, authorizing federal agencies to provide essential assistance including debris removal, temporary housing, and distribution of medicine, food, and other consumable supplies. A major disaster declaration authorizes implementation of federal recovery programs, including public assistance, individual assistance, and hazard mitigation (Cal OES 2019).

Some wildland fires, while significant in size and destruction of natural resources, may be in remote areas with minimal development. These fires thus may not result in a high dollar value of losses because destruction of structures or infrastructure may be minimal in these areas and are not eligible for State or federal declarations. Los Angeles County has by far the most number of declared State and federal fire emergencies of any other county in the State with 52 emergencies, almost twice the number for any other county (Cal OES 2018).

3.20.1.4 Post-fire Threats

Wildland fire can have secondary negative impacts, during and after the fire, in the form of air pollution, soil erosion resulting in siltation in streams and lakes, or mudslides. Behind wildfire, flooding is the most common and costly natural hazard in the nation. After the record-breaking

wildfires in California in 2018, including the Woolsey Fire, the Federal Emergency Management Agency (FEMA) issued a warning of the likelihood of flash floods and mudflows in the fire-damaged areas. All fire-damaged and surrounding areas are at risk of flooding for up to several years (FEMA 2018).

Large debris flows and flash floods can cause structural damage to bridges and roadways. Because District 29 pipelines are usually underground in roadways or attached to bridges, any damage to roadways and bridges could affect the pipelines, as well, disrupting or contaminating the water lines. For more information relating to flooding, see Section 3.10, *Hydrology and Water Quality*.

3.20.1.5 Emergency Plans

The Emergency Preparedness Program coordinates the City's response to disasters, such as fires, floods, earthquakes, and storms. The Public Safety Manager is responsible for implementing the plan. In 2004, the City established a Community Emergency Response Team training program.

Pacific Coast Highway (PCH) acts as the major evacuation route in the Malibu area. It is common to evacuate the canyon areas down onto PCH during wildfires, flooding, and other causes. During the November 2018 Woolsey Fire, the entire city of Malibu from the Ventura County Line to Malibu Canyon Road was under a mandatory evacuation (Malibu 2018). The fire eventually crossed PCH for most of this distance (CAL FIRE 2018). In the winter following the Woolsey Fire, portions of PCH were also closed due to post-fire flooding and mudslides.

3.20.2 Regulatory Setting

3.20.2.1 Federal

Global Change Research Act of 1990

The Global Change Research Act mandates that the U.S. Global Change Research Program deliver a report to Congress and the President no less than every 4 years that integrates, evaluates, and interprets the findings of the program; analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; analyzes current trends in global change, both human-induced and natural; and projects major trends for the subsequent 25 to 100 years. Included in the changes to the environment is the increase in wildfires due to global climate change.

3.20.2.2 State

Defensible Space Law

This law (Public Resources Code [PRC] § 4201), which became effective in January 2005, extended the required defensible space clearance around homes and structures from 30 feet to 100 feet. It states that a person who 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 shall at all times maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line.

SRA Fire Safe Regulations

This law is the basic wildland fire protection standards of the California Board of Forestry. The purpose of these regulations is to establish minimum wildfire protection standards in SRAs, including for emergency access and vegetation modification.

3.20.2.3 Local and Regional

Los Angeles County Fire Code

Chapter 49 of the Los Angeles County Fire Code addresses requirements for WUI fire areas, which include the entire proposed project area. It requires the management of hazardous vegetation and fuels to reduce the severity of potential exterior wildfire exposure to buildings, and to reduce the risk of fire spreading to buildings. It also requires the maintenance of defensible space around all buildings in an SRA or LRA.

Los Angeles County Local Hazard Mitigation Plan

In compliance with the Disaster Mitigation Act of 2000, the Los Angeles County LHMP describes each of the threats faced by county communities and puts forth strategies to reduce or eliminate known risks. The LHMP addresses all major natural and human-caused disasters that occur within the geographic boundaries of the Operational Area. The LHMP addresses many mitigation goals and strategies that cross political boundaries. The hazard mitigation goals set forth in the LHMP are as follows:

- Promote disaster-resistant future development.
- Increase public understanding and support for effective hazard mitigation.
- Enhance hazard mitigation coordination and communication with federal, State, local, and tribal governments.
- Build internal and external support and commitment to become less vulnerable to hazards.
- Reduce the possibility of damage and losses to existing assets, particularly people and facilities/infrastructure.

Los Angeles Brush Clearance Program

The County has a Brush Clearance Program that requires clearance of hazardous vegetation. These measures create "defensible space" for effective fire protection (LACoFD 2019b).

Malibu General Plan

The Malibu General Plan has the following goals, objectives, policies, and implementation measures related to fire protection:

- **S Goal 1:** A community that is free from all avoidable risks to safety, health and welfare from natural and manmade hazards.
- **S Objective 1.1:** Losses to life and property from natural and man-made hazards greatly reduced from historic levels.
- **S Policy 1.1.1:** The City shall protect people and property from environmental hazards.
- **S Policy 1.1.2:** The City shall minimize the risk of loss from fire.

- **S Policy 1.1.7:** The City shall minimize the risks from landslides and debris flows.
- **S Implementation Measure 2:** Work with other agencies to ensure effective and efficient fire suppression, prevention, and rescue services.
- **S Implementation Measure 7:** Work with appropriate agencies to assure sufficient stored water and provide non-monetary incentives for on-site or area-wide shared storage water suitable for fire-fighting equal to one gallon for each square foot of structural floor area for all new development.
- **S Implementation Measure 9:** Create a major streets and routes plan which includes streets available as wildfire escape routes.
- **S Implementation Measure 11:** Develop guidelines and standards for all new and remodel structures to utilize fire-resistant building materials and designs, and, if feasible, to be sited to minimize fire hazards.
- **S Implementation Measure 17:** Work with water service providers to identify neighborhoods with inadequate flow from fire hydrants, and to upgrade deteriorated and undersized water-distribution systems.

Malibu Local Coastal Plan

The Malibu Local Coastal Plan has the following policies related to fire protection:

- **LUP Policy 4.1:** The City of Malibu and the Santa Monica Mountains Coastal Zone contain areas subject to hazards that present substantial risks to life and property. These areas require additional development controls to minimize risks and include, but shall not be limited to, the following:
  - Fire Hazard: Areas subject to major wildfires classified in extremely high fire hazard zones.
- **LUP Policy 4.50:** New development shall provide for emergency vehicle access and fire-flow water supply in accordance with applicable fire safety regulations.

3.20.3 Impacts and Mitigation

3.20.3.1 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Substantial impairment of an adopted emergency response plan or emergency evacuation plan.
- As a result of slope, prevailing winds, or other factors, the exacerbation of risks of and exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- Installation or maintenance of project-associated infrastructure (e.g., 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 on the environment.
- Exposure of people or structures to significant risks such as downslope or downstream flooding or landslide as a result of runoff, post-fire slope instability, or drainage changes.

3.20.3.2 Impacts

The proposed facilities consist of buried pipelines, steel tank reservoirs, and pipeline creek crossings, none of which are habitable structures. Reservoirs and buried pipelines would suffer little damage

from fires because of their design and materials (steel tanks) and/or location (underground pipes). Pipes hanging from bridges at creek crossings and the reservoir tank could be damaged by fire. The facilities would not have elements that could cause fires. Electrical wiring would be enclosed in metal conduits. Post-fire effects, such as flooding, mudflows, and debris flows, could affect pipelines if the roadways or bridges are significantly damaged. While water distributions systems are not, and cannot be, practically designed to fight wildfires, implementation of the proposed project could minimally improve the ability to contain and extinguish wildfires in the area by addressing existing deficiencies in fire flow capacity.

Impact WF-XX.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?

Significant and unavoidable.

Construction

The project components include construction of pipelines in street rights-of-way including PCH. During construction of pipelines, temporary road or lane closures may be instituted that could require police, fire, and other emergency vehicles (ambulances) to increase response times because they may need to use less direct routes or deal with lane closures in responding to emergency calls in the project area. In addition, project construction may temporarily affect fire department vehicle access to streets, fire hydrants, or structures adjacent to the affected roadways. Temporary construction impacts on fire and police protection services and ambulances would be potentially significant. Implementation of **MM TRA-1** through **MM TRA-4** (Section 3.17, *Transportation*) could reduce these impacts to less than significant.

Operation

Once constructed, project facilities would not impair or interfere with emergency response/ evacuation plans because access and vehicle routes would not be obstructed by project operation. With incorporation of proper safety provisions into the design of the proposed facilities, updates to equipment and training, and continued compliance with applicable regulations, project impacts on the public and the environment during routine project operation and in the event of an accident would be less than significant.

Impact WF-XX.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 uncontrolled spread of a wildfire?

No impact.

Construction and Operation

The proposed project would not include any elements that would exacerbate wildfire risks associated with pollutant concentrations or uncontrolled spread of wildfire. To the contrary, implementation of

the proposed project could minimally improve the ability to contain and extinguish wildfires in the area by addressing existing deficiencies in fire flow capacity. The project would result in no impacts.

Impact WF-XX.c.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing environmental impacts on the environment?

Less than significant.

Construction

The construction of project components would include use of equipment that could result in sparks that could exacerbate fire risks. However, construction contractors will be required to comply with the Los Angeles County Fire Code, which requires spark arresters or similar qualified devices on all construction equipment within any hazardous fire area. The fire code also has mandatory safety requirements related to removal of vegetation, storage of flammable materials, maintenance of fire access, and other requirements, and construction contractors would be required to comply. Therefore, temporary environmental impacts related to exacerbated fire risks would be less than significant.

Operation

The proposed project would not include any operational elements that would exacerbate wildfire risks, resulting in environmental impacts. The proposed project would improve the ability to contain and extinguish wildfires in the area by addressing existing deficiencies in fire flow capacity. No impacts would occur.

Impact WF-XX.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 a result of runoff, post-fire slope instability, or drainage changes?

Less than significant.

The proposed project would not include any elements that would expose people or structures to significant risks related to risks of downslope/downstream flooding or landslide. (See Section 3.10 for additional information on flooding.) Impacts would be less than significant.

3.20.3.3 Mitigation Measures

MM TRA-1 through **TRA-4** in Section 3.17, *Transportation*, are also applicable to wildfire impacts. Implementation of these mitigation measures could reduce impacts to less-than-significant levels.

3.20.3.4 Level of Significance after Mitigation

Implementation of **MM TRA-1** through **TRA-4** in Section 3.17, *Transportation*, would reduce impacts to emergency response and evacuation routes to less-than-significant levels.

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Chapter 4
Summary of Impacts

4.1 Environmental Effects Found not to be Significant

Based on the analysis presented in this EIR, construction and operation of the District 29 Priority Capital Deficiencies Improvements would have no impacts or less-than-significant impacts for topics as listed in Table 4-1.

Table 4-1. Environmental Effects Found not to Be Significant

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Aesthetics			
AES-I.a.	*Would the project have a substantial adverse effect on a scenic vista?*	√ Operation	√ Construction
AES-I.b.	*Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?*	√ Operation	√ Construction
AES-I.c.	*Would the project 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 a 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?*		√ Construction & Operation
AES-I.d.	*Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*		√ Construction & Operation
Agricultural & Forestry Resources			
AG-I.a.	*Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*	√ Construction & Operation	
AG-II.b.	*Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*	√ Construction & Operation	
AG-II.c.	*Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (Government Code Section 51104(g))?*	√ Construction & Operation	

CEQA Topic	Impact	No Impact	Less-than-significant Impact
AG-II.d.	*Would the project result in the loss of forestland or conversion of forestland to non-forest use?*	√ Construction & Operation	
AG-II.e.	*Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?*	√ Construction & Operation	
Air Quality			
AQ-III.a.	*Would the project conflict with or obstruct implementation of the applicable air quality plan?*	√ Construction & Operation	
AQ-III.b.	*Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard?*		√ Construction & Operation
AQ-III.c.	*Would the project expose sensitive receptors to substantial pollutant concentrations?*		√ Construction & Operation
AQ-III.d.	*Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*		√ Construction & Operation
Cultural Resources			
CUL-V.a.	*Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?*	√ Construction & Operation	
CUL-V.b.	*Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*	√ Operation	
CUL-V.c.	*Would the project disturb any human remains, including those interred outside of formal cemeteries?*	√ Operation	
Energy Resources			
EN-VI.a.	*Would the project result in potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*	√ Operation	√ Construction
EN-VI.b.	*Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*	√ Construction & Operation	

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Geology, Soils, & Paleontological Resources			
GEO-VII.a.i.	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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 a known fault? (Refer to Division of Mines and Geology Special Report 42.)*		√ Construction & Operation
GEO-VII.a.ii.	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*		√ Construction & Operation
GEO-VII.a.iii.	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*		√ Construction & Operation
GEO-VII.a.iv.	*Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*		√ Construction & Operation
GEO-VII.b.	*Would the project result in substantial soil erosion or the loss of topsoil?*		√ Construction & Operation
GEO-VII.c.	*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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?*		√ Construction & Operation
GEO-VII.d.	*Would the project result 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?*		√ Operation
GEO-VII.e.	*Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?*	√ Construction & Operation	
GEO-VII.f.	*Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*		√ Operation
Greenhouse Gas Emission			
GHG-VIII.a.	*Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?*		√ Construction & Operation
GHG-VIII.b.	*Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*		√ Construction & Operation

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Hazards and Hazardous Materials			
HAZ-IX.a.	*Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*		√ Construction & Operation
HAZ-IX.b.	*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?*		√ Operation
Hydrology and Water Quality			
HWQ-X.a.	*Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*		√ Construction & Operation
HWQ-X.b.	*Would the project substantially decrease groundwater supplies or substantially interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*	√ Operation	√ Construction
HWQ-X.c.i.	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?*		√ Construction & Operation
HWQ-X.c.ii.	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?*		√ Construction & Operation
HWQ-X.c.iii.	*Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, i in a manner that would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*		√ Construction & Operation
HWQ-X.d.	*In flood hazard, tsunami, or seiche zones, would the project risk the release of due to project inundation?*		√ Construction & Operation
HWQ-X.e.	*Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*		√ Construction & Operation

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Land Use			
LU-XI.a.	*Would the project physically divide an established community?*		√ Construction & Operation
LU-XI.b.	*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?*		√ Construction & Operation
Mineral Resources			
MIN-XII.a.	*Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	√ Construction & Operation	
MIN-XII.b.	*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?*	√ Construction & Operation	
Noise			
NOI-XIII.a.	*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?*		√ Operation
NOI-XIII.b.	*Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*	√ Operation	
NOI-XIII.c.	*For a project located in the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 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?*	√ Construction & Operation	
Population and Housing			
POP-XIV.a.	*Would the project induce substantial unplanned population growth in an area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?*	√ Construction & Operation	
POP-XIV.a.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?*	√ Construction & Operation	

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Public Services			
PS-XV.a.i.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?*		√ Construction & Operation
PS-XV.a.ii.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?*		√ Construction & Operation
PS-XV.a.iii.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?*		√ Construction & Operation
PS-XV.a.iv.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?*		√ Construction & Operation
PS-XV.a.v.	*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?*		√ Construction & Operation
Recreation			
REC-XVI.a.	*Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?*		√ Construction & Operation
REC-XVI.b.	*Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?*	√ Operation	√ Construction

CEQA Topic	Impact	No Impact	Less-than-significant Impact
Transportation			
TRA-XVII.a.	*Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities?*	√ Operation	
TRA-XVII.b.	*Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subsection (b)?*	√ Construction & Operation	
TRA-XVII.c.	*Would the project substantially increase in hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*	√ Operation	√ Construction
TRA-XVII.d.	*Would the project result in inadequate emergency access?*	√ Operation	
Tribal Cultural Resources			
TCR-XVIII.a.	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 or in a local register of historical resources as defined in PRC Section 5020.1(k)?*	√ Operation	
TCR-XVIII.b.	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 PRC 5024.1? In applying the criteria set forth in subdivision (c) of PRC 5024.1 1, the lead agency shall consider the significance of the resource to a California Native American tribe?*	√ Construction & Operation	
Utilities and Utility Systems			
UT-XIX.a.	*Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*	√ Operation	

CEQA Topic	Impact	No Impact	Less-than-significant Impact
UT-XIX.b.	*Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?*	√ Construction & Operation	
UT-XIX.c.	*Would the project result in a determination by the wastewater treatment provider that 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?*	√ Construction & Operation	
UT-XIX.d.	*Would the project 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?*	√ Operation	√ Construction
UT-XIX.e.	*Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?*	√ Operation	√ Construction
Wildfire			
WF-XX.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?*		√ Operation
WF-XX.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 uncontrolled spread of a wildfire?*	√ Construction & Operation	
WF-XX.c.	*If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing environmental impacts on the environment?*	√ Operation	√ Construction
WF-XX.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 a result of runoff, post-fire slope instability, or drainage changes?*		√ Construction & Operation

4.2 Significant Environmental Effects that can be Mitigated to Less-than-significant Levels

Based upon the analysis presented in this EIR, construction and operation of the District 29 Priority Capital Deficiencies Improvements would have significant impacts that can be reduced to less-than-significant impacts with implementation of mitigation measures for topics as listed in Table 4-2.

Table 4-2. Significant Environmental Effects that can be Mitigated to Less-than-significant Levels

CEQA Topic	Impact	Mitigation
Biological Resources		
BIO-IV.a.	*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 CDFW or USFWS?*	**Construction & Operation** MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-7 MM BIO-8 MM BIO-9 MM BIO-10
BIO-IV.b.	*Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?*	**Construction & Operation** MM BIO-10 MM BIO-11 MM BIO-12
BIO-IV.c.	*Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?*	**Construction & Operation** MM BIO-13 MM BIO-14 MM BIO-15 MM BIO-16 MM BIO-17 MM BIO-18
BIO-IV.d.	*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?*	**Construction & Operation** MM BIO-1 MM BIO-3 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-7 MM BIO-11 MM BIO-12 MM BIO-19

CEQA Topic	Impact	Mitigation
BIO-IV.e.	*Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*	MM BIO-4 MM BIO-11 MM BIO-12
BIO-IV.f.	*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?*	MM BIO-9 MM BIO-10
Cultural Resources		
CUL-V.b.	*Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*	**Construction** MM CUL-1 MM CUL-2
CUL-V.c.	*Would the project disturb any human remains, including those interred outside of formal cemeteries?*	**Construction** MM CUL-1 MM CUL-3
Geology, Soils, & Paleontological Resources		
GEO-VII.d.	*Would the project result 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?*	**Construction** MM GEO-1
GEO-VII.f.	*Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*	**Construction** MM GEO-2 MM GEO-3
Hazards and Hazardous Materials		
HAZ-IX.b.	*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?*	**Construction** MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4
Noise		
NOI-XIII.b.	*Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*	**Construction** MM NOI-2
Transportation		
TRA-XVII.a.	*Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities?*	**Construction** MM TRA-1 MM TRA-2 MM TRA-3 MM TRA-4
TRA-XVII.d.	*Would the project result in inadequate emergency access?*	MM TRA-1 MM TRA-2 MM TRA-3 MM TRA-4

CEQA Topic	Impact	Mitigation
Tribal Resources		
TCR-XVIII.a.	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 or in a local register of historical resources as defined in PRC Section 5020.1(k)?*	**Construction** MM CUL-1 MM CUL-2

4.3 Significant Environmental Effect that Cannot be Mitigated to Less-than-significant Levels

Based upon the analysis presented in this EIR, construction of the District 29 Priority Capital Deficiencies Improvements would have significant impacts that cannot be reduced to less-than-significant levels as listed in Table 4-3. In all cases, these significant and unavoidable impacts are due to the potential inability to implement MM TRA-3 in Section 3.17, *Transportation,* because it is not known whether the City of Malibu will allow nighttime construction.

Table 4-3. Significant Environmental Effects that Cannot be Mitigated to Less-than-significant Levels

CEQA Topic	Impact	Mitigation
Noise		
NOI-XII.a.	*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?*	**Construction** MM NOI-1
Utilities and Utility Systems		
UT-XIX.a.	*Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?* *(Noise only, see above.)*	**Construction** MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4 MM BIO-5 MM BIO-6 MM BIO-7 MM BIO-8 MM BIO-9 MM BIO-10 MM BIO-11 MM BIO-12 MM BIO-13 MM BIO-14 MM BIO-15 MM BIO-16 MM BIO-17 MM BIO-18 MM BIO-19 MM CUL-1 MM CUL-2 MM CUL-3 MM GEO-1 MM GEO-2 MM GEO-3 MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM NOI-1 MM NOI-2 MM TRA-1 MM TRA-2 MM TRA-3 MM TRA-4 MM TRA-5 MM TRA-6

Chapter 5
Cumulative Impacts

5.1 Requirements for Cumulative Impact Analysis

The California Environmental Quality Act (CEQA) Guidelines Section 15355 refers to *cumulative impacts* as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental effects. Section 15130(a) requires Environmental Impact Reports (EIR) to discuss cumulative impacts when the project's incremental effect is cumulatively considerable.

Two approaches are used to analyze cumulative impacts, commonly known as the *list approach* and the *plan approach*. The list approach uses a list of known projects that may combine with the proposed project to result in a cumulative impact. The plan approach uses an adopted plan, such as a general plan or other regulatory plan, and considers whether the proposed project's impacts were considered in the plan or are in addition to the plan. This document uses the list approach, except as identified in Section 5.2. The projects considered in the cumulative impact analysis are listed in Section 5.2.

5.2 Projects Considered in the Cumulative Analysis

The following projects are considered in this analysis. These projects are also listed in Chapter 2, *Project Description*, and their locations are shown on Figure 2-12, Cumulative Impact Analysis Projects, in Chapter 2.

5.2.1 Lower Busch Tank Improvement

The Lower Busch Tank Improvement is a tank replacement project at 5731 Busch Drive in Malibu, with construction planned for March to November 2021. This Waterworks District 29 project will replace a 300,000-concrete reservoir with a 385,000 tank. This project was analyzed in a Negative Declaration, adopted in 2005 and again in 2013. The Lower Busch Tank Improvement would be completed (in 2021) before any of the project improvements are begun (in 2022).

5.2.2 Malibu Branch Feeder Realignment

The Malibu Branch Feeder Realignment is a waterline replacement and installation project located at 15413 Pacific Coast Highway (PCH), Pacific Palisades, with construction planned for February to April 2020. This project was analyzed in a Categorical Exemption, adopted in 2018. The project construction dates would not overlap any of the improvements in the proposed project.

5.2.3 Owen Tank Improvement

The Owen Tank Improvement, at 2300 S. Tuna Canyon Road, Topanga, is a Waterworks District 29 project with construction planned for March to November 2021. This project was analyzed in an MND adopted in 2017. The project construction dates would not overlap any of the improvements in the proposed project.

5.2.4 Civic Center Improvements (Sweetwater)

The Civic Center Improvements (Sweetwater) is located on PCH, Cross Creek Road, Serra Road, and Sweetwater Mesa Road in Malibu. This project does not have an adopted environmental document. This is a tank installation and waterline replacement project with construction planned for June 2021 to June 2022. The construction dates overlap with the following proposed project improvements:

- Coastline Drive 12-inch Waterline Improvements (located 7 miles east)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (5 miles west)
- Emergency Source of Water Supply Connection (Las Virgenes Connection) (11 miles west)
- Upper Encinal Tank Improvement (11 miles west)

5.2.5 Trancas Creek Bridge Replacement Project

The Trancas Creek Bridge Replacement Project is located on PCH at Trancas Creek in Malibu. This project would include replacement of a District 29 waterline attached to the existing bridge. Caltrans approved a Mitigated Negative Declaration (MND) for the project in 2018. Construction is planned to start in December 2020 and finish in June 2022. The construction dates overlap with the following proposed project improvements:

- Coastline Drive 12-inch Waterline Improvements (located 15.5 miles east)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (2.6 miles east)
- Emergency Source of Water Supply Connection (Las Virgenes Connection) (2.5 miles west)
- Upper Encinal Tank Improvement (3.1 miles west)
- District 29 Creek Crossing Repairs, the nearest being Zuma Creek (1.5 miles east).

5.2.6 Civic Center Wastewater Treatment Facility

The Civic Center Wastewater Treatment Facility is a three-phase project consisting of a Civic Center Wastewater Treatment Facility located on a 4.8-acre site southwest of Civic Center Way, between Winter Canyon Road and PCH, east of Malibu Canyon Road, nine pump stations, and approximately 13.7 miles of pipeline. The City of Malibu's EIR was certified in January 2015. Phase 1 was completed in 2019. Phase 2 is currently in the engineering and design phase, with construction anticipated between 2022 and 2024, including pipelines on PCH between Webb Way and Civic Center Way and between Cross Creek Road and approximately 800 feet west of Malibu Pier. Phase 3 is scheduled for construction between 2024 and 2028 and includes pipelines on PCH between 800 feet west of Malibu Pier and Sweetwater Canyon Drive. The construction dates for Phase 2 would overlap with the following project improvements:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (1.5 miles northeast)
- Coastline Drive 12-inch Waterline Improvements (6 miles east)
- Fernwood Tank Improvement (5 miles northeast)
- PCH and Topanga Beach Drive Waterline Improvements, Segment 3 (0.5 mile east)
- Emergency Source of Water Supply Connection (Las Virgenes Connection) (10 miles west)

- Upper Encinal Tank Improvement (10 miles west)
- District 29 Creek Crossing Repairs, the nearest being Corral Canyon Creek (2.5 miles east).

The construction dates for Phase 3 would overlap with the Big Rock Bypass Improvement, which is 4 miles east of the nearest Phase 3 pipeline, and Fernwood Tank Improvement, which is approximately 6 miles northeast.

5.2.7 Crummer Site Subdivision (Case Project)

The Crummer Site Subdivision (now called the Case Project) is located at 24120 PCH in the City of Malibu, on the south side of PCH between Malibu Canyon Road/Winter Mesa Drive and Civic Center Way. The project includes a seven-lot gated community, with five single-family residences, accessory uses, and active and passive recreational uses. The Malibu City Council certified the EIR in 2014, and approved a 2016 Addendum for project modifications necessary for Coastal Development Permit requirements and a 2020 Addendum for a temporary skate park. The Case Project and the temporary skate park were completed in 2020. Construction would be completed before the proposed project construction would begin.

5.2.8 La Paz Ranch Project

The La Paz Ranch Project includes three separate commercial development projects for retail, office, and City Hall uses. The site is located on approximately 15 acres, north of Civic Center Way between La Paz Lane and Cross Creek Road. Malibu certified the project EIR in 2008, with an addendum in 2015 and another currently under consideration by the City. Although a construction schedule has not been released, the analysis in the current addendum uses 2022 as the buildout date. Proposed project improvements construction that could overlap with the La Paz Ranch Project construction would include:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (1.5 miles east)
- Coastline Drive 12-inch Waterline Improvements (7.5 miles east)
- District 29 Creek Crossing Repairs (nearest crossing, Corral Canyon Creek, 2 miles west)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (4 miles west)
- Emergency Source of Water Supply Connection (Las Virgenes Connection) (10 miles west)
- Upper Encinal Tank Improvement (10 miles west)

5.2.9 Santa Monica College – Malibu Campus Project

The Santa Monica College – Malibu Campus Project is located at 23555 Civic Center Way in Malibu. It would demolish a vacant building, formerly used for the Los Angeles County Sheriff's Station and the Los Angeles County Superior Court, and construct a new two-story education facility and community Sheriff's Substation and Emergency Operations and Planning Center. The Santa Monica College Board of Trustees certified the EIR in January 2016. The project is currently under construction, with a scheduled opening date in school year 2022. Proposed project improvements construction that could overlap with the college construction would include:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (1. 5 miles east)

- Coastline Drive 12-inch Waterline Improvements (7.5 miles east)
- District 29 Creek Crossing Repairs (nearest crossing, Corral Canyon Creek, 2 miles west)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (4 miles west)
- Emergency Source of Water Supply Connection (Las Virgenes Connection) (10 miles west)
- Upper Encinal Tank Improvement (10 miles west)

5.2.10 Encinal Canyon Waterline 525/825 Improvements

The Encinal Canyon Waterline 525/825 Improvements are located on Vista Del Preseas, Camino De Buena Ventura, Avenida De La Encinal, Vista De Los Ondas Street, Encinal Canyon Road, Calle De La Burrita, Avenida Del Mar, Via Vienta Street, and 4511 South Avenida De La Encinal in Malibu. This project was analyzed in a Statutory Exemption, Emergency Project and adopted in 2019. This is a waterline replacement project and upgrading the existing Lower Encinal pump station with construction planned for January 2022 to September 2022 This waterline and pump station improvement project is nearly adjacent (within 0.1 mile) of the Emergency Source of Water Supply Connection and Upper Encinal Tank improvements, which would overlap in construction dates. Other proposed project improvements construction that could overlap with the waterline improvements would include:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (12 miles east)
- Coastline Drive 12-inch Waterline Improvements (17.5 miles east)
- District 29 Creek Crossing Repairs (nearest crossing, Zuma Creek, 2.8 miles west)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (5.4 miles west)

5.2.11 Caltrans PCH Secant Wall Improvements

The Caltrans PCH Secant Wall Improvements are located on PCH, approximately 0.3 mile south of Big Rock Drive in Malibu. The project would include relocation of District 29 waterlines that conflict with the proposed secant wall (retaining wall). (Environmental documentation for this project is not known.) Planned construction dates are December 2021 to June 2022.

Proposed project improvements construction that could overlap with the college construction would include:

- Carbon Canyon Road and Carbon Mesa Road Waterline Improvements (2. 5 miles east)
- District 29 Creek Crossing Repairs (nearest crossing, Las Flores Canyon Creek, 1.6 miles west)
- PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road) (8.5 miles west)
- Upper Encinal Tank Improvement (15.5 miles west)

5.2.12 Other Potential Projects

Additional projects may occur in the project area during the construction periods for various improvements, but the timing currently is unknown. Even with approved environmental documents, many construction schedules have been affected by the November 2018 fires and road closures and other damage from winter storms in 2018/2019. Roads and infrastructure are undergoing unplanned

repairs from the fire and storms; in some cases, these repairs may take years. A large number of homes and other structures were destroyed in the 2018 fire, and few have been reconstructed.

5.3 Cumulative Impact Analysis by Resource

5.3.1 Aesthetics

Aesthetics impacts do not normally contribute to cumulative impacts, except in very specific circumstances, such as development in an area where multiple projects permanently affect the visual resources, linear projects like roadways that permanently change the visual character over the length of the project, or two adjacent projects viewable from the same location. Therefore, the study radius for cumulative analysis of aesthetics is the area viewshed of each improvement site, i.e., the area around each improvement that can be viewed. If more than one project or improvement is within this viewshed, then the two projects or improvement could combine to result in a cumulative aesthetic impact. The District 29 Priority Capital Deficiencies Improvements project was found to have less-than-significant aesthetic impacts during construction for all of the improvements, no operational impacts for underground pipeline and creek crossing repairs, and less-than-significant impacts for the two tank improvements.

Impacts to scenic vistas resulting from the District 29 Priority Capital Deficiencies Improvements project were found to be less than significant. Less-than-significant construction impacts were identified for the improvements or staging areas, and less-than-significant operational impacts at the Fernwood Tank Improvement and the Upper Encinal Tank Improvement. Only the construction of the PCH and Topanga Beach Drive Waterline Improvements, Segment 3, could overlap with a cumulative analysis project, the Civic Center Wastewater Treatment Facility, Phase 2, which includes, among other things, construction of new wastewater pipelines in PCH. Both projects would affect scenic vistas (views of the ocean) at a less-than-significant level. The pipeline construction from these projects would be located approximately 0.5 mile apart, the westernmost end of the PCH and Topanga Beach Drive Waterline Improvements; Segment 3 is 0.5 mile west of the easternmost portion of the Civic Center Wastewater Treatment Facility Phase 2 pipelines. Even if construction were to occur on the same few days at these locations, the distance between them would ensure that the projects are outside the viewsheds of each other. Therefore, the two projects would not result in cumulative impacts to scenic vistas.

Impacts related to damage to scenic resources within a state scenic highway resulting from the District 29 Priority Capital Deficiencies Improvements project were found to be less than significant. Less-than-significant construction impacts were identified for the improvements or staging areas, and no impacts were identified for operation of the Fernwood Tank Improvement and Upper Encinal Tank Improvement, neither of which is visible from state scenic highway. Only the construction of the PCH and Topanga Beach Drive Waterline Improvements, Segment 3, could overlap with a cumulative analysis project, the Civic Center Wastewater Treatment Facility, Phase 2, which includes, among other things, construction of new wastewater pipelines in PCH. The timing of this particular pipeline on PCH could occur at approximately the same time as the PCH and Topanga Beach Drive Waterline Improvements, Segment 3. Both projects would affect scenic highways at a less-than-significant level. The pipeline construction from these projects would be located approximately 0.5 mile apart; the westernmost end of the PCH and Topanga Beach Drive Waterline Improvements, Segment 3, is 0.5 mile west of the easternmost portion of the Civic Center Wastewater Treatment Facility Phase 2

pipelines. Even if construction would occur on the same few days at these locations, the distance between them would ensure that the projects are outside the viewsheds of each other. Therefore, the two projects would not result in cumulative impacts to scenic highways.

5.3.2 Agriculture and Forestry Resources

The proposed project would have no impacts to agriculture or forestry resources. Therefore, impacts from the proposed project would not combine with other projects to result in cumulatively considerable impacts.

5.3.3 Air Quality

In California, air quality in one area in which there is an existing significant cumulative impact. For that reason, the Southern California Air Quality Management District (SCAQMD) has developed an Air Quality Management Plan (AQMP) that establishes rules and mitigation requirements for projects that exceed its thresholds. If a project is consistent with the assumptions used in the development of the AQMP, to the extent that no mitigation is required, the project would comply with SCAQMD rules created to prevent considerable contributions to significant cumulative impacts.

The cumulative study area for regional air quality impacts is the South Coast Air Basin. The cumulative study area for localized emissions is discussed below.

The proposed project would have no impacts related to conflicts with the SCAQMD's AQMP because it would not increase the frequency or severity of existing violations or cause or contribute to new violations (Consistency Criterion No. 1); it would not change land uses and is consistent with the assumptions in the AQMP (Consistency Criterion No. 2). Therefore, the project would not result in a considerable impact to a significant cumulative impact.

The proposed project would add minor increases in regional mass emissions, but would not exceed the thresholds for any criteria pollutants. Therefore, the project would not result in a considerable impact to a significant cumulative impact.

Project construction activities under the proposed project would occur near sensitive receptors. However, none of the project elements would exceed SCAQMD's localized significance thresholds, using the most stringent receptor distance methodology (1-acre construction site with a 25-meter receptor distance). The nearest potential overlapping cumulative project construction would be approximately 0.1 mile away (approximately 800 meters). Therefore, the proposed project would not combine with other concurrent projects to result in a cumulative impact to sensitive receptors.

The proposed project would result in less-than-significant odor impacts, resulting from asphalt paving activities, stationary equipment, and maintenance, which may be detectible by people next to the improvement sites. If this occurred, however, it would not combine with concurrent construction or maintenance of any of the cumulative analysis project, because of the distance between them.

5.3.4 Biological Resources

The proposed project construction occurs mostly within existing street rights-of-way (ROW) with little or no biological resources. The exceptions are the creek crossing repairs, the Fernwood and Upper Encinal Tank Improvements, and two staging areas, Applefield Lane Vacant and Northwest Intersection of Encinal Canyon Road and PCH.

The cumulative study area for impacts to special-status species is the habitat for the specific species within 200 feet of the project improvements. A buffer area for general habitat assessment in the biological analysis (Section 3.4, Biological Resources), is 100 feet. A 200-foot radius for cumulative impacts would account for the proposed project buffer area and the buffer area for adjacent projects. Special-status species may be temporarily directly or indirectly affected by nearby construction activities when present, a significant impact without mitigation. Mitigation measures would prevent impacts, resulting in less-than-significant impact levels. None of cumulative analysis projects would be within the 200-foot radius: the nearest project would be Phase 2 Pipelines of the Civic Center Wastewater Treatment Facility project, which would be within approximately 0.5 mile of the PCH and Topanga Beach Drive Waterline Improvements, Segment 3 (see Section 3.4, *Biological Resources*). Because these are pipeline improvements within the public ROW, impacts would be minimal and would not combine to result in a cumulatively significant impact.

The cumulative study area for impacts to riparian and other sensitive habitats includes similar habitat within 200 feet of the project improvements (as explained for special-status species). Six of the project's improvement sites or staging areas would affect riparian or sensitive habitats onsite or within the 50-foot buffer area used for analysis: Carbon Canyon/Carbon Mesa Road, Zuma Creek Crossing Repair, Fernwood Tank, PCH West of Topanga Beach Drive (Segments 1 and 2 only), Emergency Source of Water Supply Connection (Las Virgenes Connection), and the Applefield Lane Vacant Lot. The habitats present are Southern Riparian Forest, Southern Sycamore Alder Riparian Woodland, Southern Coast Live Oak Riparian Forest, and California Walnut Woodland. Impacts to these sensitive habitats would include tree trimming and tree removal and would be significant. Mitigation measures would reduce this impact to less than significant (see Section 3.4). None of the improvement sites that would affect sensitive habitats are within 200 feet of any cumulative analysis project. Therefore, the project's impacts would not combine with impacts from other projects to result in a cumulatively significant impact.

The only proposed project improvements that would occur in or near wetlands are the District 29 Creek Crossing Repairs and the PCH 8-inch Waterline Improvement (Zumirez Drive to Escondido Beach Road). The cumulative study area for wetlands includes the extent of wetlands affected by the project improvements. The proposed project would have less-than-significant impacts with mitigation (see Section 3.4). None of the cumulative analysis projects would affect these wetlands; therefore, the project improvements would not contribute to cumulative impacts.

For wildlife movement, the cumulative study area includes the corridor where a project-related impact would occur. Impacts from construction of the proposed project would result from District 29 Creek Crossing Repairs and PCH 8-inch Waterline Improvements (Zumirez Drive to Escondido Beach Road). Any impacts to wildlife moving through a specific area would be temporary and limited only to work hours, but some discrete construction activities may result in significant impact. Mitigation measures would reduce these impacts to less than significant (see Section 3.4). Because none of the cumulative analysis projects would affect wildlife movement in the project corridor, the proposed project would not contribute to a significant cumulative impact.

Construction could result in significant impacts to native wildlife nursery sites around improvement locations. The cumulative study area for native wildlife nursery sites would be the extent of the nursery sites. Active bird nests or other active wildlife nursery/breeding sites within the general presence of construction or in or around vegetation that needs to be trimmed or removed could be adversely affected by required construction activities, potentially leading to a significant impact if construction results in removal of or impacts to these nursery sites or nests or of individual wildlife.

Mitigation would reduce these impacts to less than significant (see Section 3.4). None of the cumulative analysis projects are located close enough to affect these nursery sites. Therefore, there would be no cumulative impacts to native wildlife nursery sites.

Only one proposed project improvement would result in impacts related to local policies protecting biological resources. The Fernwood Tank improvement would remove oak trees protected by the Los Angeles County Oak Tree Ordinance, which is a significant impact. Mitigation would reduce this to less than significant (see Section 3.4). For this impact, the cumulative study area would include the oak woodland in the Topanga/Fernwood area. Only one of the cumulative analysis projects are within this study area, the Owen Tank Improvement. The Owen Tank Improvement would not remove oak trees protected by the Los Angeles County Oak Tree Ordinance. Therefore, there would be no cumulative impacts to protected oak trees.

The Carbon Canyon Road and Carbon Mesa Road Waterline Improvements and the Emergency Source of Water Supply Connection (Las Virgenes Connection) would result in a small amount (less than 0.2 acre total) of potential temporary impact to Environmentally Sensitive Habitat Areas (ESHAs) under the Malibu Local Coastal Program (LCP), although, due to apparent mapping errors, it is unlikely that these impacts would occur. For the purposes of analysis, a significant impact was assumed to occur. Mitigation measures would reduce this impact to less than significant (see Section 3.4). The cumulative study area for this impact is defined as the entire mapped ESHA in which the project improvement is located. None of the cumulative analysis projects are located in these mapped areas. Therefore, the project would not contribute to a cumulative impact related to policies to protect biological resources.

5.3.5 Cultural Resources

Cumulative impacts related to cultural resources generally only occur if there are multiple projects affecting the same resource, such as an historic district or large archaeological site. Mitigation incorporated into the proposed project would ensure that any resources present would be protected and/or curated (see Section 3.5, *Cultural Resources*). None of the cumulative analysis projects are close enough to affect the same cultural resource. Therefore, the project would not contribute to cumulative cultural resources impacts.

5.3.6 Energy

During construction, the proposed project would utilize approximately 60,000 million British thermal units (MMBTU) and 433,000 gallons of diesel fuel (or equivalent) over the 6-year construction period, which would represent a negligible increase in regional demand and an insignificant amount relative to the more than 19 billion gallons of fuels used statewide in 1 year: approximately 0.000004 percent of the annual statewide usage (see Section 3.6, *Energy*). Such negligible amounts of energy resources necessary for construction would not require new or expanded sources of energy or infrastructure to meet project-related energy demand. During operation, energy used by the improvements would be similar to the existing conditions or even better. All the improvements represent replacement or repair to the existing systems, and the newer pumps and lighting (at tank sites) would be more energy efficient than the existing equipment. Energy utilized during construction periods would be used to improve water infrastructure and, therefore, would not be used in a wasteful, inefficient, or unnecessary manner. Given the negligible amount of energy used during construction, the proposed project would not contribute to cumulative impacts related to wasteful, inefficient, or unnecessary consumption of energy resources. The project would have no impact related to conflicts with any state

or local plans for renewable energy or energy efficiency, so the proposed project would not contribute to any cumulative conflicts.

5.3.7 Geology, Soils, and Paleontological Resources

Cumulative impacts related to geology, soils, and paleontological resources generally are site-specific and do not combine to create cumulative impacts, with a few exceptions, discussed below.

If a project and cumulative analysis project would increase the number of people exposed to the same geologic hazard (e.g., fault rupture), a cumulative impact could occur. The project would only result in a handful of additional construction workers in any hazard area and only for a short period of time, such as the few days necessary for pipeline repairs and replacement (the two tank improvements are not located in on or near geologically hazardous areas).

Projects located near each other could result in cumulative impacts related to erosion and loss of topsoil. All the improvements in the proposed project would incorporate Los Angeles County Best Management Practices (BMPs) because contractors working on Los Angeles Department of Power and Water (LADPW) projects are required to do so. Therefore, impacts related to erosion and loss of topsoil would be less than significant. None of the cumulative analysis projects are located in close enough proximity to combine with the proposed project improvements and result in a cumulative impact.

Cumulative impacts related to paleontological resources generally only occur if there are multiple projects affecting the same resource, such as an historic district or large archaeological site. Most proposed project improvements (all except the District 29 Creek Crossing Repairs, which would not disturb soils, and Big Rock Bypass, which is not in sedimentary soils) would be located in or near sedimentary soils potentially containing vertebrate fossil material. Because these improvements would be located in already disturbed soils, it is unlikely, although still possible, that paleontological resources may be encountered (Upper Encinal Tank Improvement may affect soils previously not disturbed and may contain paleontological resources). Mitigation incorporated into the proposed project would ensure that any resources present would be protected and/or curated (see Section 3.7, *Geology, Soils, and Paleontological Resources*). None of the cumulative analysis projects are close enough to affect the same paleontological resource. Therefore, the project would not contribute to cumulative paleontological resources impacts.

5.3.8 Greenhouse Gas Emissions

By nature, greenhouse gas (GHG) emissions impacts are cumulative: they have a worldwide impact. The project-level analysis for GHG emissions, provided in Section 3.8, *Greenhouse Gas Emissions,* is also a cumulative impact analysis, because the methodology specifically considers the proposed project's contribution to cumulative impacts. Therefore, the cumulative impact of the proposed project is the same as the project-level impact. The proposed project's contribution to GHG emissions is within the SCAQMD thresholds and would not conflict with any applicable plan policy or regulation adopted for reducing GHG emissions. Therefore, it would not contribute to cumulative GHG impacts.

5.3.9 Hazards and Hazardous Materials

Similar to geological impacts, impacts related to hazards and hazardous materials are highly localized, so the cumulative study area includes the specific hazards or hazardous sites that would be affected

by the proposed project's improvements. Los Angeles County's BMPs would be required for all contractors working on the improvement sites (see Table 3.9-4, District 29 Construction BMPs, in Section 3.9, *Hazards and Hazardous Materials)*. These BMPs would ensure that the proposed project would not result in significant hazards due to the use of hazardous materials during construction or routine operation activities, and impacts would be less than significant. Because of the distance between the improvements and any of the cumulative study projects, the project would not contribute to cumulative impacts related to hazardous materials.

The ground-disturbing activities required for all improvements, except the District 29 Creek Crossing Repairs, could encounter contaminated soils or groundwater. Mitigation would require evaluation, management plans, and disposal procedures if contaminated soils or groundwater are encountered during construction, reducing the impacts to less than significant (See Section 3.9*, Hazards and Hazardous Materials)*. Because the nearest cumulative analysis project is located approximately 0.5 mile from any improvement site and would be expected to require the same type of mitigation measures required for construction in Malibu and Los Angeles County, the proposed project would not contribute to a significant cumulative impact.

The proposed project would not be located within 2 miles of an airport and would not affect operation of the four heliports located within 2 miles of a project improvement; therefore, the project would have no impact and thus would not contribute to a cumulative impact related to airport safety.

5.3.10 Hydrology and Water Quality

Los Angeles County has a program of BMPs to prevent or minimize impacts related to hydrology and water quality, which would be incorporated into the project as part of the contractors requirements (see Table 3.10-9, District 29 Project Construction BMPs, in Section 3.10, *Hydrology and Water Quality*). Compliance with these BMPs, along with the fact that groundwater is at depth or affected by saltwater intrusion through most of the project area, means that the proposed project would not substantially degrade surface or groundwater quality. The cumulative analysis projects are also located in areas where groundwater is at depth or contaminated by saltwater intrusion. These projects would be required to the same or similar BMPs required for construction of projects in Malibu and Los Angeles County. Therefore, the projects would not combine to result in cumulatively considerable impacts.

The proposed project would not alter existing drainage patterns and would have negligible impacts related to the addition of impervious surfaces. Only the larger tank improvement for the Upper Encinal Tank Improvement would increase the area of impervious surfaces. The Upper Encinal Tank Improvement site would be designed with swales and slopes to manage the runoff from the larger pervious areas, including the larger tank. Controlling the runoff onsite would allow the site to be returned to its preconstruction condition. Therefore, the proposed project would have less-than-significant impacts related to surface runoff. The Upper Encinal Tank Improvement is isolated and at least 10 miles from any of the cumulative analysis projects. Therefore, the project's impacts would not contribute to significant cumulative impacts.

Some proposed project improvements are located near or within 100-year floodplains or susceptible to inundation from tsunamis. Implementation of the County BMPs, discussed above, would prevent release of pollutants in floodplains. Work in floodplains would be suspended and any pollutants removed in heavy rainfall where flooding may occur. Tsunamis are unlikely, but if a 100-year or 500-year tsunami were to occur without sufficient warning to evacuate, the impacts from the inundation

at the District 29 project would be less than significant considering the limited amount of materials used for the improvements. Even if combined with the cumulative analysis projects located in the tsunami zone, the amount of pollutants compared to the volumes of water encountered in a 100-year or 500-year tsunami would result in a less-than-significant cumulative impact.

5.3.11 Land Use

The cumulative study area for land use impacts would include the jurisdiction (or planning area) in which the proposed improvements would be located, in this case, Malibu (for most of the improvements) and the Los Angeles County Santa Monica Mountains Coastal Zone (for the Coastline Drive 12-inch Waterline Improvements and the Fernwood Tank Improvement). The proposed project would not permanently divide a community, and the construction-related impacts would be less than significant because they would be in roadways that already divide the community, if present. These in-road pipelines would only affect roadways for a very short period of time (no more than a week) in any one location. The cumulative analysis projects would not be located close enough to divide the same community. Therefore, the project would not contribute to cumulative impacts related to community division. The proposed project would not change land uses or otherwise affect land uses; therefore, it would not contribute to cumulative land use impacts.

5.3.12 Mineral Resources

The proposed project would have no impacts to mineral resources, as none are present in the project area. Therefore, impacts from the proposed project would not combine with other projects to result in cumulatively considerable impacts.

5.3.13 Noise

Typically, cumulative noise impacts do not occur for most types of projects. This is because noise is a personal impact; for cumulative impacts to occur, they must affect the same person. Therefore, cumulative impacts would only occur if two or more projects were in very close proximity to an individual or were very loud. The closest cumulative analysis project with concurrent construction would be the Civic Center Wastewater Treatment Facility, where the Phase 2 pipeline construction could occur at the same time as the PCH and Topanga Beach Drive Waterline Improvements, Segment 3. The distance between the projects is approximately 0.5 mile. Even if construction were to occur at the same time at the easternmost point of the Phase 2 pipelines and the westernmost point of the Segment 3 pipeline, the distance between the construction sites would be too great to combine and affect the same receivers. Sound levels attenuate (drop off) at a rate of 6 A-weighted decibels (dBA) for each doubling of distance. The noise levels for the noisiest equipment (graders) would be 85 dBA at 50 feet. This would mean that the noise level would be reduced to the quietest ambient noise level (approximately 60 dBA) within 1,000 feet, which is less than half the distance to between the projects. In addition, intervening topography, structures, and landscaping are between the projects, further shielding additional noise. Therefore, cumulative impacts would be unlikely.

5.3.14 Population and Housing

The proposed project would have minimal impacts to population and housing because it would not include housing or long-term employment nor facilitate growth because the expansion of water pipelines and tanks would serve existing domestic and fire-flow water demand over the next 6 years.

Therefore, impacts from the proposed project would not combine with other projects to result in cumulatively considerable impacts.

5.3.15 Public Services

The study area for cumulative impacts includes the service areas for public service providers. The proposed project would have minimal impacts to service ratios, fire protection, police protection, schools, or other public services. The only cumulative analysis project that could affect the same roadway used for emergency response at the same time is the Civic Center Wastewater Treatment Facility, Phase 2 pipelines, located 0.5 mile from the PCH and Topanga Beach Drive Waterline Improvements, Segment 3. The minimal impact for the easternmost point of the Phase 2 pipelines and the westernmost point of the Segment 3 pipeline would not combine to result in a cumulative impact to public service response times.

5.3.16 Recreation

The proposed project would have minimal impacts to recreation. Trails crossing roadways, especially PCH, would be blocked or detoured for short periods of time (i.e., one or two days), thus the impact would be minimal. Three beach parking lots could be used as optional staging areas, but only after coordination the Los Angeles County Department of Parks and Recreation (DPR). If adequate parking were not available, other construction station areas would be used. Therefore, the proposed project's impact to recreation would not contribute to cumulative impacts.

5.3.17 Transportation

Traffic analysis is inherently cumulative because it examines expected traffic impacts of the project as they combine with future conditions at the time of construction. The proposed project would reduce travel lanes during in-road construction, which would be a significant impact, but mitigation is provided to reduce these impacts to less than significant.

Bicycle routes and pedestrian facilities would be affected, but only for short periods of time at any one location; **MM-TRA-5** would require safe detours for bicycle traffic and thus reduce this impact to less-than-significant levels. Because only one other project would also affect the same bicycle facilities at the same time, the Civic Center Wastewater Treatment Facility, Phase 2 pipelines, located 0.5 mile from the PCH and Topanga Beach Drive Waterline Improvements, Segment 3, impacts of the two projects would not combine to result in a significant cumulative impact. For pedestrians, significant impacts could occur where there is insufficient ROW to accommodate safe pedestrian movements in areas that do not have sidewalks (i.e., Carbon Canyon Road, Carbon Mesa Road, Horseshoe Drive, and Encinal Canyon Road). **MM-TRA-6**, requiring safe pedestrian detours, would reduce this impact to less-than-significant levels. None of the cumulative analysis projects would affect these roadways, so no cumulative impacts would occur.

5.3.18 Tribal Cultural Resources

As with other cultural resources, cumulative impacts related to tribal cultural resources generally only occur if there are multiple projects affecting the same resource, such as a large archaeological site or sacred site. Mitigation incorporated into the proposed project would ensure that any resources present would be protected appropriately (see Section 3.5, *Cultural Resources*). None of the

cumulative analysis projects are close enough to affect the same tribal cultural resource. Therefore, the project would not contribute to cumulative tribal cultural resources impacts.

5.3.19 Utilities and Service Systems

The cumulative study area for utility and service systems includes the service areas that would serve each of the proposed project improvement locations. The proposed project involves improvement of existing water services, including pipelines, a reservoir, and an emergency source of water connection. It would not result in new or expanded entitlements for water supply, nor would it have an impact to wastewater treatment facilities. Minimal amounts of construction waste would be disposed of, but soil would be reused and other materials recycled to the extent possible. Therefore, solid waste impacts would be minimal. The limited amount of impacts to utilities and service systems would not contribute to significant cumulative impacts.

5.3.20 Wildfire

The proposed project is intended, in part, to improve fire flow, resulting in a beneficial impact related to potential wildfire. The proposed project would have minimal impacts to emergency routes. In the case of an evacuation scenario from wildfires, such as with the Woolsey Fire in 2018, the in-road construction for Segment 3 would cease and the roadway made safe for emergency evacuation purposes. Therefore, the proposed project would not contribute to a significant impact on emergency routes. The proposed project would not exacerbate wildfire risk. In fact, while water distribution systems are not, and cannot be, practically designed to fight wildfires, implementation of the proposed project could minimally improve the ability to contain and extinguish wildfires in the area by addressing existing deficiencies in fire-flow capacity. Therefore, the proposed project would not contribute to a significant cumulative impact.

Chapter 6
Growth-Inducing Impacts

6.1 Introduction

State California Environmental Quality Act (CEQA) Guidelines Section 15126 requires an examination of ways in which the proposed project could foster economic growth, either directly or indirectly, individually or cumulatively, in the surrounding environment. To address this issue, potential growth-inducing effects are examined through the analysis of the following:

- If the project would foster economic or population growth.
- If the project would include the construction of additional housing, either directly or indirectly.
- If the project would remove obstacles to growth.
- If the project would encourage or facilitate other activities that would significantly affect growth.

CEQA does not assume that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

6.2 Summary of Growth-inducing Impacts

The proposed project would replace and repair existing pipelines and a reservoir and provide an emergency water connection to be used if the primary pipeline is unavailable. The project would not substantially increase the capacity of the water systems. Although pipelines and tanks would be expanded, this expansion would serve existing domestic and fire flow water over the next 6 years.

6.2.1 Direct Growth-inducing Impacts

The proposed project would not provide housing or employment. Therefore, it would not directly induce growth in the surrounding environment.

6.2.2 Indirect Growth-inducing Impacts

The proposed project would not substantially increase the capacity of the water systems; it is intended to serve only existing needs for domestic and fire flow water over the next 6 years. It would not foster economic or population growth. Because the project is intended to serve existing needs, it would not remove obstacles to growth by providing new service hookups, or encourage or facilitate other activities that would significantly affect growth, either individually or cumulatively. Therefore, the project would not indirectly induce growth.

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Chapter 7
Significant, Irreversible Environmental Changes

7.1 Introduction

State CEQA Guidelines Section 15126.2(c) requires an analysis of significant irreversible changes that would be caused by the proposed project if it is implemented. Uses of nonrenewable resources during initial and continued phases of the project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary and, particularly, secondary impacts, generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources are evaluated to assure that such current consumption is justified.

7.2 Analysis of Irreversible Changes

Construction of the project would require the use of heavy equipment, workers' vehicles, delivery trucks, and, potentially, soil-hauling trucks. The equipment and vehicles would consume nonrenewable fossil fuels for the length of construction and, to a smaller degree, for maintenance throughout the life of the project. After construction is complete, no substantial additional resources would be used above those used under the existing condition. Because the project would improve utility service in the service area, the benefits of the project justify the use of irreplaceable resources.

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Chapter 8
Alternatives Analysis

8.1 Introduction

During consideration of a project that could have a significant effect on the environment, the California Environmental Quality Act (CEQA) requires that alternatives that could avoid or lessen the project's significant effects be considered. This chapter presents potential alternatives to the proposed project and evaluates them as required by CEQA. The State CEQA Guidelines also require that an Environmental Impact Reports (EIR) identify the environmentally superior alternative from among the alternatives, including the proposed project and the no project alternative. The environmentally superior alternative is identified in Section 8.6.

CEQA Guidelines Section 15126.6 requires an EIR to describe a range of reasonable alternatives to the project or the location of the project that would attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. The EIR is not required to consider infeasible alternatives, nor alternatives that would not reduce impacts.

This chapter first summarizes the project objectives and significant impacts identified in Chapter 3, of this document, *Environmental Analysis*, discussing possible alternatives that were considered, but rejected because they did not meet the project objectives, were infeasible, or would not reduce the significant impacts of the project. The feasible project alternatives that have not been rejected are then evaluated and compared to the impacts of the proposed project. Finally, the environmentally superior alternative is identified.

8.2 Project Objectives

The objectives of the proposed project are to:

- Provide a more reliable water system for existing Waterworks District 29 customers.
- Complete the most critical water system improvements that have been identified in Waterworks District 29 over the next 6 years.

8.3 Significant Environmental Impacts

As discussed in the analyses in Chapter 3, and summarized in Chapter 4, *Summary of Impacts*, all significant impacts would be reduced to less-than-significant levels through the implementation of mitigation.

8.4 Alternatives Considered but Rejected

Section 15126.6(a) of State CEQA Guidelines states that an EIR shall describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of

the project," as well as provide an evaluation of "the comparative merits of the alternatives." Under Section 15126.6(a), an EIR does not need to consider alternatives that are not feasible, nor need it address every conceivable alternative to the project. The range of alternatives "is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." The focus is on informed decision-making and public participation, rather than providing a set of alternatives simply to satisfy format.

8.4.1 Different Improvements Alternative

In 2012, Los Angeles County Waterworks District 29 drafted a Water Systems Master Plan (WSMP), in which improvement projects were considered and grouped by phases. In the draft WSMP, Phase 1 included 42 pipeline improvements, 40 needed to correct existing system deficiencies in fire flow or flow velocity, plus an emergency connection. The draft WSMP also included 16 reservoir projects on existing reservoir sites, as well as pumping stations and pressure regulating stations.

Since the WSMP was drafted, District 29 identified improvements to correct the most critical system deficiencies. These deficiencies were prioritized based on operational imperatives, importance to the overall system, and capacity. These improvements, identified as the priority capital deficiencies improvements, are included as the proposed project and addressed in this EIR.

Other improvements from the Phase 1 projects list in the draft WSMP were considered as alternatives for this analysis, as listed in Table 8-1, Phase 1 Project Considered as Alternatives. The Phase 1 pipeline improvements would use the same type of construction methods as the pipeline improvements included in the proposed project, as would tank replacements. The new tanks included in the Phase 1 projects would require additional construction to prepare the sites and connect to pipelines.

The alternative improvements would not meet the project objectives to provide a more reliable water system for existing District 29 customers and complete the most critical water system improvement projects that District 29 has identified for the next 6 years. Therefore, the Different Improvements Alternative was not carried forward in this analysis.

Table 8-1. Phase 1 Projects Considered as Alternatives

Improvement No.	Location
Pipelines	
EFF4	Bonsal Drive, Calpine Drive
EFF5	Via Escondido Drive, Sycamore Meadows Drive
EFF7	Lunita Road
EFF8	Delaplane Road
EFF11	Sea Vista Drive and Via Linda Street
EFF13	Sea Level Drive
EFF14	PCH Between Sea Level Drive & La Herran Drive
EFF17	Sweetwater Canyon Drive, Beckledge Terrace, PCH to Sweetwater East Tank Pipeline
EFF18	Coast View Drive
EFF19	Unnamed street near Las Flores Canyon Road
EFF21	Encinal Canyon Road, Avenida Del Mar, Via Vienta Street, Vista De Los Ondas Street
EFF23	Avenida De La Encinal, Camino De Buena Ventura, Vista Del Preseas
EFF24	Tuna Canyon Road
EFF25	Waveview Drive
EFF26	Colina Drive
EFF27	Marquette Drive
EFF28	Topanga Skyline Drive
EV1	Las Flores Mesa Drive (Sierks Way to Las Flores tank)
Tanks	
ES-03	Replace Philip Tank
ES-06	New Las Flores Mesa Tank
ES-08	New Portshead Tank
ES-09	Replace Carbon Mesa Tank

8.4.2 More Improvements Alternative

During the scoping period for the project and in this EIR, some commenters expressed a desire for more improvements to be included in the project and the EIR, and thereafter constructed, allowing a greater number of water connections to be provided, facilitating additional development. Impacts from additional improvements, and the secondary impacts of growth facilitated by these improvements, would not reduce significant impacts of the proposed project, but would increase some impacts due to the larger scale of the project. It is likely that the impacts of the More Improvements Alternative would result in more significant impacts, some of which could be significant and unavoidable (i.e., could not be reduced to less than significant with mitigation, especially if they required new pipelines and new tanks in areas that did not have tanks before). This would also go beyond meeting the critical water system needs that have been identified in Waterworks District No. 29 over the next 6 years. Therefore, the More Improvements Alternative was not carried forward in this analysis.

8.4.3 Fewer Improvements Alternative

During the scoping period for this EIR, some commenters expressed a desire for fewer improvements to be included in the project and the EIR, thereby reducing the potential for additional development. Although a smaller-scale project could reduce significant and unavoidable impacts by eliminating construction along Pacific Coast Highway (PCH), the Fewer Improvements Alternative would also not meet the project objectives to provide a more reliable water system for existing District 29 customers and complete the most critical water system improvement projects that District 29 has identified for the next 6 years. These most critical system deficiencies were identified by conducting outreach and evaluating funding availability and options. These deficiencies were prioritized based upon operational imperatives, importance to the overall system, and capacity. Therefore, the Fewer Improvements Alternative was not carried forward in this analysis.

8.5 Analysis of Impacts of Alternatives

Because the alternatives listed in Section 8.4, *Alternatives Considered*, would not reduce significant impacts related to the proposed project (all of which would be reduced to less-than-significant levels with implementation of mitigation) and/or would not meet the project objectives, no build alternatives were identified for this analysis. However, CEQA Guidelines Section 15126.6(e)(1) requires the analysis of a "no project" alternative to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the project.

Because it is unknown whether or not nighttime construction would be implemented (as called for in Mitigation Measure **TRA-3**), the proposed project is assumed to result in significant and unavoidable impacts related to noise levels at sensitive receptors during nighttime construction and significant and unavoidable traffic impacts related to daytime construction in the PCH right-of-way.

8.5.1 No Project Alternative

8.5.1.1 Description of the No Project Alternative

Under the No Project Alternative, there would be no pipeline replacements, no tank replacement, and no emergency source of water connection. Not replacing the aging infrastructure would lead to more leaks and failures, requiring emergency or expedited repairs. Not providing the emergency source of water connection would leave the water district more vulnerable to water shortages in emergencies.

8.5.1.2 Impacts of No Project Alternative

In this analysis, the potential impacts of the No Project Alternative are compared to those of the proposed project.

Table 8-2. Comparison of Alternatives

Resource	Impact	Impact with Project	No Project Alternative
Aesthetics	**AES-1:** Substantial adverse effect on a scenic vista	LTS	LTS, although deterioration of the tanks may result in impacts on scenic vistas that could not be avoided by maintenance
Aesthetics	**AES-2:** Substantial damage to scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway	LTS	None
Aesthetics	**AES-3:** In non-urbanized areas, substantial degradation of the existing visual character or quality of public views, from a publicly accessible vantage point, of the site and its surroundings. In urbanized areas, a conflict(s) with the applicable zoning and other regulations governing scenic quality	LTS	LTS, although deterioration of the tanks may result in impacts on scenic vistas that could not be avoided by maintenance
Aesthetics	**AES-4:** Creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area	LTS	LTS, because no potential for nighttime construction; operational impacts would be equal
Agriculture and Forestry Resources	**AG-1:** Conversion of important farmland to nonagricultural use	None	None
Agriculture and Forestry Resources	**AG-2:** Conflict with existing zoning for agricultural use or with a Williamson Act contract	None	None
Agriculture and Forestry Resources	**AG-3:** Conflict with existing zoning of forest land, timberland, or timberland-zoned timberland production	None	None
Agriculture and Forestry Resources	**AG-4:** Loss of forest land or conversion of forest land to non-forest use	None	None
Agriculture and Forestry Resources	**AG-5:** Potential to cause changes in the existing environment that could result in conversion of farmland to nonagricultural use or conversion of forest land to non-forest use	None	None
Air Quality	**AQ-1:** Conflict with or obstruction of implementation of the applicable air quality plan	None	None

Resource	Impact	Impact with Project	No Project Alternative
Air Quality	**AQ-2:** Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Air Quality	**AQ-3:** Exposure of sensitive receptors to substantial pollutant concentrations	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Air Quality	**AQ-4:** Other emissions (such as those leading to odors) adversely affecting a substantial number of people	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Biological Resources	**BIO-1**: 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 California Fish and Wildlife or U.S. Fish and Wildlife Service	LTS with mitigation	None
Biological Resources	**BIO-2:** Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by California Fish and Wildlife or U.S. Fish and Wildlife Service	LTS with mitigation	None
Biological Resources	**BIO-3:** Substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means	LTS with mitigation	None
Biological Resources	**BIO-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	LTS with mitigation	None
Biological Resources	**BIO-5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	LTS with mitigation	None

Resource	Impact	Impact with Project	No Project Alternative
Biological Resources	**BIO-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	LTS	None
Cultural Resources	**CUL-1:** Potential to cause a substantial adverse change in the significance of a historical resource	None	None
Cultural Resources	**CUL-2:** Potential to cause a substantial adverse change in the significance of an archaeological resource	LTS with mitigation	None
Energy	**EN-1:** Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Energy	**EN-2:** Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency	None	None
Geology, Soils, and Paleontological Resources	**GEO-1:** Potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides	LTS	LTS, (older pipelines and tanks may be more susceptible than to failure than replacements)
Geology, Soils, and Paleontological Resources	**GEO-2:** Potential to result in substantial soil erosion or the loss of topsoil	LTS	LTS, (older pipelines and tanks may be more susceptible than to failure than replacements)
Geology, Soils, and Paleontological Resources	**GEO-3:** Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	LTS	LTS, (older pipelines and tanks may be more susceptible than to failure than replacements)
Geology, Soils, and Paleontological Resources	**GEO-4:** Placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property	LTS with mitigation	LTS, (older pipelines and tanks may be more susceptible than to failure than replacements)

Resource	Impact	Impact with Project	No Project Alternative
Geology, Soils, and Paleontological Resources	**GEO-5:** Placement of facilities on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	None	None
Geology, Soils, and Paleontological Resources	**GEO-6:** Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature	LTS with mitigation	None
Greenhouse Gas	**GHG-1:** Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Greenhouse Gas	**GHG-2:** Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hazards and Hazardous Materials	**HAZ-1:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hazards and Hazardous Materials	**HAZ-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	LTS with mitigation	LTS (only from increased maintenance requirements of the aging infrastructure)
Hazards and Hazardous Materials	**HAZ-3:** Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	LTS with mitigation	LTS (only from increased maintenance requirements of the aging infrastructure)
Hazards and Hazardous Materials	**HAZ-4:** Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment	LTS with mitigation	None

Resource	Impact	Impact with Project	No Project Alternative
Hazards and Hazardous Materials	**HAZ-5:** Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area	None	None
Hydrology and Water Quality	**WQ-1:** Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-2:** Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-3:** Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite	LTS	LTS (aging pipeline or tank failures may lead to erosion)
Hydrology and Water Quality	**WQ-4:** Substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-5:** Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-6:** Obstruction or redirection of flood flows caused by drainage modifications	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-7:** In flood hazard, tsunami, or seiche zones, risk of release of pollutants as a result of project inundation	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Hydrology and Water Quality	**WQ-8:** Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan	LTS	LTS (only from increased maintenance requirements of the aging infrastructure)
Land Use	**LU-1:** Physical division of an established community	LTS	None

Resource	Impact	Impact with Project	No Project Alternative
Land Use	**LU-2:** Conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	LTS	None
Mineral Resources	**MIN-1:** Contribution to the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	None	None
Mineral Resources	**MIN-2:** Contribution to the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	None	None
Noise	**NOI-1:** Generation of increased ambient noise levels in the project vicinity in excess of applicable standards	S&U	None
Noise	**NOI-2:** Generation of excessive groundborne vibration or groundborne noise levels	LTS with mitigation	None
Noise	**NOI-3:** Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels	LTS (heliports only)	LTS (only from increased maintenance requirements of the aging infrastructure)
Population and Housing	**POP-1:** Creation of substantial population growth, either directly or indirectly	None	None
Population and Housing	**POP-2:** Displacement of a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere	None	None
Public Services	**PS-1:** Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, or other public facilities	LTS	None
Recreation	**REC-1:** Increased use of existing recreational facilities, resulting in substantial physical deterioration	LTS	None

Resource	Impact	Impact with Project	No Project Alternative
Recreation	**REC-2:** Construction or expansion of recreational facilities that might have an adverse physical effect on the environment	LTS	None
Transportation	**TRA-1:** Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities	LTS with mitigation	LTS (only from increased maintenance requirements of the aging infrastructure)
Transportation	**TRA-2:** Substantial increase in hazards because of a geometric design feature (e.g., sharp curves, dangerous intersections) or incompatible uses (e.g., farm equipment)	LTS	None
Transportation	**TRA-3:** Potential to cause inadequate emergency access	LTS	None
Tribal Cultural Resources	**TCR-1:** Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe 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)	LTS with mitigation	None
Utilities and Service Systems	**UT-1:** Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects	S&U (see NOI-1)	LTS (only from increased maintenance requirements of the aging infrastructure)
Utilities and Service Systems	**UT-2:** Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years	None	None
Utilities and Service Systems	**UT-3:** Project-related exceedance of existing wastewater treatment capacity	None	None

Resource	Impact	Impact with Project	No Project Alternative
Utilities and Service Systems	**UT-4:** Project-related exceedance of state or local solid waste standards or of the capacity of local infrastructure or other impediments to attaining solid waste reduction goals	LTS	None
Utilities and Service Systems	**UT-5:** Inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste	LTS	None
Wildfire	**WF-1:** Substantial impairment of an adopted emergency response plan or emergency evacuation plan	LTS with mitigation	None
Wildfire	**WF-2:** Exacerbation of wildfire risks associated with pollutant concentrations or uncontrolled spread of wildfire	None	S&U: No Project Alternative would not provide secure fire flow. Mitigation would be to provide more fire flow capacity, as proposed in the District 29 Priority Capital Deficiencies Improvements.
Wildfire	**WF-3:** Project-related installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing environmental impacts	LTS	S&U: No Project Alternative would not provide secure fire flow. Mitigation would be to provide more fire flow capacity, as proposed in the District 29 Priority Capital Deficiencies Improvements.
Wildfire	**WF-4:** Exposure of people or structures to significant risks such as downslope or downstream flooding or landslide as a result of runoff, post-fire slope instability, or drainage changes	LTS	S&U: No Project Alternative would not provide secure fire flow. Mitigation would be to provide more fire flow capacity, as proposed in the District 29 Priority Capital Deficiencies Improvements.

8.5.2 Comparison of Alternatives

For the most part, the No Project Alternative would result in lower impacts because construction would not take place. For a few resources, impacts may be higher, because failing infrastructure could lead to erosion or because water service capacity (especially fire flow) would not meet the needs of customers or firefighters.

8.6 Environmentally Superior Alternative

CEQA Guidelines Section 15126(e)(2) requires that an environmentally superior alternative be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative which would result in the least adverse environmental impacts to the project site and surrounding area. If the No Project Alternative is found to be the environmentally superior alternative, the document must identify an environmentally superior alternative among the other alternatives.

For this analysis, the No Project Alternative is the environmental superior alternative because it would reduce many of the impacts, including significant and avoidable impacts. However, it would not meet the project objectives and, in some cases, would have higher impacts related to the failure of aging infrastructure and deficiencies in fire-flow capacity. The No Project Alternative would not provide a more reliable water system for existing Waterworks District 29 customers, and it would not complete the most critical water system improvements that have been identified in Waterworks District No. 29 over the next 6 years.

The environmentally superior alternative other than the No Project Alternative is the proposed project.

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Chapter 9
Preparers

Below is a list of the people who participated in the preparation of this EIR. For the consultants, resumes of the key prepares are included in Appendix G.

9.1 Los Angeles County Department of Public Works Waterworks District 29

- Alma Fuentes Quintana, Project Manager
- Philip Siongco
- Eduardo Maguino
- Mohsen Azouz

9.2 ICF

- Donna McCormick, Project Manager
- Saadia Byram
- Ken Cherry
- David Duncan
- Meagan Flacy
- Tamar Love Grande
- Meris Guerrero
- Peter Hardie
- Greg Hoisington
- Sarah Horwath
- Megan Jameson
- Kristen Klinefelter
- Jenelle Mountain-Castro
- Laura Rocha
- Jakob Rzeszutko
- Paul Schwartz
- Emily Seklecki
- Rusty Whisman
- Ryan Winkleman
- Terrance Wong

9.3 JM Diaz

- Steven Itagaki, PE, TE, PTOE, Project Manager

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Chapter 10
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