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SOLANA RESIDENTIAL DEVELOPMENT PROJECT

for City of Torrance

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PLACEWORKS

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ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CGS	California Geologic Survey
CMP	congestion management program
CNDDB	California Natural Diversity Database

Abbreviations and Acronyms

CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LBP	lead-based paint
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MCL	maximum contaminant level
MEP	maximum extent practicable
mgd	million gallons per day

Abbreviations and Acronyms

MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SRA	source receptor area [or state responsibility area]
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants

Abbreviations and Acronyms

TNM	transportation noise model
tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment

1. Executive Summary

1.1 INTRODUCTION

This Draft Environmental Impact Report (DEIR) addresses the environmental effects associated with the implementation of the proposed Solana Residential Development Project (proposed project, project). The California Environmental Quality Act (CEQA) requires that local government agencies consider the environmental consequences before taking action on projects over which they have discretionary approval authority. An environmental impact report (EIR) analyzes potential environmental consequences in order to inform the public and support informed decisions by local and state governmental agency decision makers. This document focuses on impacts determined to be potentially significant in the Initial Study completed for this project (see Appendix A).

This DEIR has been prepared pursuant to the requirements of CEQA and the City of Torrance's CEQA local procedures. As the lead agency, the City of Torrance has reviewed and directed the revisions all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including reliance on City technical personnel from other departments and review of all technical subconsultant reports.

Data for this DEIR derive from onsite field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, air quality, biological resources, cultural resources, geological resources, hazards and hazardous materials, hydrology and water quality, land use, noise, public services, transportation, tribal cultural resources, and utilities and service systems).

1.2 ENVIRONMENTAL PROCEDURES

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce environmental damage.
3. Prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental effects.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

1. Executive Summary

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 DEIR Format

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this DEIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Chapter 2. Introduction: Describes the purpose of this DEIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this DEIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Chapter 7. Alternatives to the Proposed Project: Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the No Project/No Development Alternative, Allowable Density Alternative, and a Reduced Intensity Alternative.

Chapter 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this DEIR.

Chapter 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Chapter 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this DEIR.

Chapter 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this DEIR for the proposed project.

Chapter 13. Bibliography: The technical reports and other sources used to prepare this DEIR.

Appendices: The appendices for this document (in PDF format on a CD attached to the front cover) comprise these supporting documents:

- Appendix A1 Initial Study, Notice of Preparation (NOP) and NOP Comments
- Appendix B: Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Solana Torrance Project
- Appendix B1: CalEEMod Estimation of Fuel and Energy Use for Construction and Operation
- Appendix C: Biological Resources Technical Report for the Solana Torrance Project, City of Torrance, California
- Appendix D: Cultural Resources Investigation Report, Solana Residential Development, within the City of Torrance, Los Angeles County, California
- Appendix E1: Geotechnical Investigation Report
- Appendix E2: Fault Rupture Hazard Investigation
- Appendix E3: Paleontological Resources for the Solana Project, City of Torrance, Los Angeles County, California
- Appendix E4: Suggested Contingency Factor for Estimation of Soil Excavation Quantity During Grading Proposed Multi-Family Residential Development Vesting Tentative Tract Map 74147, Lot 1 Hawthorne Boulevard and Via Valmonte, Torrance, California
- Appendix F1: Solana Torrance Property Phase I Environmental Site Assessment, Torrance, California

- Appendix F2: Limited Subsurface Assessment Results, (Phase II ESA) Solana Torrance Development, Torrance, California
- Appendix F3: Report of Findings, Solana Torrance Site, Hawthorne Boulevard and, Via Valmonte, Torrance, CA
- Appendix F4: Department of Toxic Substances Control Comments on the Administrative Draft Environmental Impact Report (ADEIR) for the Butcher-Solana Residential Development Project (also known as Solana Torrance, DTSC Site Code 401791)
- Appendix G: Solana Torrance Preliminary Drainage Study
- Appendix H: Noise Analysis Technical Report for the Solana Torrance Project City of Torrance, California
- Appendix I: Public Services and Utility Provider Correspondence
- Appendix J: Traffic Impact Study, Solana Torrance, Torrance, California
- Appendix K: Gary Stickel's Letter Commenting on the Cultural Resources Investigation Report
- Appendix L1: Hydraulic Network Analysis for Fire and Domestic Water Service
- Appendix L2: Solana Torrance, Sewer Area Study
- Appendix L3: Written response to Stormwater service questionnaire by Ted Symons, Associate Civil Engineer, Torrance Community Development Department
- Appendix L4: Written response to Water service questionnaire by Michael Ritchey, Associate Civil Engineer, Torrance Community Development Department
- Appendix L5: Written response to Wastewater service questionnaire by Los Angeles County Sanitation District

1.2.2 Type and Purpose of This DEIR

This DEIR has been prepared as a "Project EIR," defined by Section 15161 of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3). A project EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR examines all phases of the project including planning, construction, and operation.

1.3 PROJECT LOCATION

The project site is on the southern boundary of the City of Torrance at the northern foot of the Palos Verdes Hills in southwestern Los Angeles County. The nearest freeway to the site is Interstate 110 (I-110 or the Harbor Freeway) approximately 3.9 miles to the east via Pacific Coast Highway (SR-1). The two nearest state highways to the project site are SR-1, approximately 0.7 mile to the north; and SR-107, Hawthorne Boulevard, also approximately 0.7 mile to the north. Local access is provided by Hawthorne Boulevard, with secondary access from Via Valmonte. The north half of the southwest site boundary is bounded by the City of Palos Verdes Estates, and the south half by the City of Rolling Hills Estates.

The project site is 24.68 acres at the southwest corner of Hawthorne Boulevard and Via Valmonte. The site is private property, signed and fenced; there are no sanctioned public access points to the site. However, it should be noted, that public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance. The project site includes Assessor's Parcel Numbers (APNs) 7547-001-018, 7547-001-019, 7547-001-020, 7547-001-021, 7547-002-011, 7547-001-007, 7547-001-008, 7547-001-009, 7547-001-024, 7547-001-025, 7547-001-026, 7547-002-005, 7547-002-006, 7547-002-007, 7547-002-008, 7547-002-009, 7547-002-010. The site is approximately 1,480 feet long northwest to southeast, approximately 860 feet east to west at its widest point, and is commonly referred to locally as "Butcher Hill," after the family name affiliated with ownership of the majority of the project site parcels.

1.4 PROJECT SUMMARY

The proposed project consists of development of 248 apartment units in three 5-story buildings, as shown in Table 1-1, *Proposed Apartment Units by Unit Size and Building*. The first level of each building would include ground level parking, with the exception of Building A, which would be semi-subterranean, and ground floor lobbies, with four residential floors on the second through fifth floors. The units would be one- and two-bedroom units. The project would provide a total of 484 parking spaces in one 6-story parking structure, in ground-level parking garages in each of the three apartment buildings (Building A is semi-subterranean), and surface parking.

Table 1-1 Proposed Apartment Units by Unit Size and Building

	Building Height (feet)	1-bedroom unit	2-bedroom unit	Unit Total	Residential (Square Feet)	Parking Garage (Square Feet)	Total (Square Feet)
Building A	65	53	35	**88**	98,411	25,947	**124,358**
Building B	65	57	43	**100**	121,897	33,950	**155,847**
Building C	65	25	35	**60**	72,179	18,925	**91,104**
	Total	**135**	**113**	**248**	292,487	78,822	**371,309**

The project would involve the consolidation of 17 parcels into three lots. Lot 1 would be within the footprint of the former diatomaceous earth mine and would be 5.71 acres in area. Lot 2 would be along the bluff immediately above the former diatomaceous earth mine and would be 6.0 acres in area. Lot 2's southern extent is below the edge of the bluff top of Slope 1 and Slope 3 and is primarily comprised of the bluff face and slope. Lot 2 surrounds Lot 1 on all sides from the Via Valmonte frontage to the north and Hawthorne frontage to the east. As such, Lot 2 would be comprised almost entirely of slopes and bluff-face. Lot 3 would be primarily

comprised of the level blufftop to the south of Lot 2 and would be 12.92 acres in area. Under the proposed project, all of the site development would occur in Lot 1, and Lots 2 and 3 would be preserved as undeveloped open space, for a total of 18.92 acres, with the 12.92 acres of Lot 3 maintained in its current state with no additional measures taken to restrict public access.

1.5 SUMMARY OF PROJECT ALTERNATIVES

CEQA requires that a DEIR include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6). The following three project alternatives were identified and analyzed for relative impacts as compared to the proposed project:

- No Project/No Development Alternative
- Allowable Density Alternative
- Reduced Density Alternative

The following presents a summary of the alternatives analyzed in the DEIR. These alternatives were developed to avoid or substantially lessen the significant impacts the project could have on historical resources. Please refer to Chapter 7 of this DEIR for a complete discussion of each of the alternatives and their associated impacts.

1.5.1 No-Project/No Development Alternative

In this alternative the proposed project is not built, and the project site remains as is. The backfilled former mine pit would remain as bare land and sparse vegetation, mainly non-native grassland. The upland portion of the project site would remain as vacant land and would continue to operate in its current capacity Currently, the site is private property, signed and fenced; there are no sanctioned public access points to the site. However, it should be noted that public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance.

1.5.2 Allowable Density Alternative

The Allowable Density Alternative would provide for the development of 51 single-family detached homes within the 5.71-acre Lot 1 development area with the existing allowable density of the general plan designation. In contrast to the proposed project, the Allowable Density Alternative would not require a General Plan Amendment or a zone change, but would similarly require the preparation of a Precise Plan and Tentative Tract Map subdivision activity.

Under this Alternative, it is assumed that all parking would be provided for in private-car garages as required for single family residences and with surface parking within the development, and that no parking structure would be constructed. Further, this alternative would reduce the building height of the residential structures to one- to two-stories between 18 and 27 feet, which would substantially reduce the visibility of the buildings from Hawthorne Boulevard and Via Valmonte as compared to the proposed project. The decreased density would

also allow for more landscaping and open area on the development lot. Construction activities would be similar to those anticipated for the proposed project, as this alternative would result in extensive grading with the removal of Slope 2, geotechnical engineering for foundations and footings, and the development of the clean soil cap as required by DTSC. However, grading and excavation activities would be slightly reduced compared to the proposed project as the geotechnical preparation would be reduced due to the shallower foundations required for single-family houses. As such, it is anticipated that there would be a reduction in soil export activities. Similarly, building construction and architectural coating would be significantly reduced from that evaluated for the proposed project due to the lower intensity of the development. Under the Allowable Density Alternative, Lots 2 and 3 are retained as natural open space, as with the proposed project.

1.5.3 Reduced Density Alternative

The Reduced Density Alternative would consist of development of the site with three four-story apartment buildings with 181-units and a three-story 122-space parking garage. The first level of each building would include ground level parking, (with the exception of Building A, which would be semi-subterranean,) and ground floor lobbies, with three residential floors on the second through fourth floors. Similar to the proposed project, this alternative assumes that all development associated with the Reduced Density Alternative would occur within the 5.71-acre footprint of Lot 1's development area. The total density for the 181-unit buildings would be 31.69 dwelling units per acre within the 5.71-acre Lot 1, and 7.33 dwelling units per acre within the entire 24.68-acres site. This alternative assumes the same amount of parking being provided under the three residential buildings, which would result in the parking structure being required to provide 122 spaces. The Reduced Density Alternative would provide the same onsite amenities, including common open space and recreation areas, a pool, and a clubhouse. Landscaping would be provided around the perimeter of the Lot 1's development area, the site's entrance and surface parking area, the courtyard, and the pool area. Under the Reduced Density Alternative, Lots 2 and 3 are retained as natural open space, as with the proposed project.

The Reduced Density Alternative would result in a similar level of construction intensity, as development of the project site under this alternative would require largely the same construction activities, including grading and soil hauling activities. As such, it is assumed that building pads would be constructed in the same manner as the proposed project, including the amount of excavation and grading, geotechnical engineering, and associated haul trips. It is also assumed that the buildings would have a similar finished floor elevation between 190.5 to 193.5 amsl.

1.6 AREAS OF CONTROVERSY

Pursuant to State CEQA Guidelines Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City or that were raised during the scoping process. This DEIR addresses environmental issues that are known or were raised by agencies or interested parties during the Notice of Preparation (NOP) public scoping period or during the Scoping Meeting for the Proposed Project. All of the NOP comments letters, as well as the Scoping Meeting notes, are provided in Appendix A of this DEIR.

Oral and written comments received during the public scoping period for the Initial Study/NOP indicated that areas of controversy and potential issues to be resolved included the following: (1) aesthetics, request for

silhouette during DEIR public review period, and new source of lighting on visual resources, (2) air quality, pollutant emissions relating to construction activities including fugitive dust in the form of diatomaceous earth, (3) biological and cultural resources, (4) geology and soils, slope stability and soil stability, (5) hazards, previously unknown hazardous materials at the project site, (6) land use, compatibility with the surrounding land uses and compliance with the Hillside and Coastal Overlay Zone, (7) noise, (8) public services, increase need for police and fire services, (9) traffic and parking, These issues are addressed in Sections 5.1 through 5.14 of this DEIR.

1.7 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-2, *Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*, summarizes the conclusions of the environmental analysis contained in this DEIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.1 AESTHETICS				
Impact 5.1-1: The proposed project would not have a substantial adverse effect on a scenic vista.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.1-2: The proposed project would not conflict with applicable zoning and other regulations governing scenic quality.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.1-3: The proposed project would generate additional light and glare	**Potentially Significant**	AE-1	Prior to issuance of a building permit, the applicant shall submit a photometric study and lighting plan of the proposed project to the City of Torrance Community Development Department for review. The Lighting Plan shall demonstrate compliance with the following: • The intensity and location of lights on buildings shall be subject to the Community Development Director's approval. • All lighting shall be shielded and directed downward to minimize potential light escape and/or spillover onto adjacent properties. • All site-lighting fixtures shall be provided with a flat glass lens. Photometric calculations shall indicate the effect of the flat glass lens fixture efficiency. • All residential deck and patio lighting shall incorporate full cutoff light fixtures, which is defined as a luminaire light distribution where no light is emitted above the horizontal, and where the intensity at 80 degrees from nadir is no greater than 100 candelas per 1000 lamp lumens. • Lighting design and layout shall limit spill light to no more than 1 foot-candle at the property line of the surrounding neighbors. • Glare shields may be required for select light standards. Conclusions of the study shall be compared to applicable thresholds regarding the presence of spill lighting, set at 1 foot-candle of spill light at the project property line.	Less Than Significant
		AE- 2	Upon completion of the project's construction, prior to issuance of any occupancy permit, a qualified electronic engineer shall take field measurements along the property line of the project site and the residences at 24706, 24704, 24660, and	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		24648 Via Valmonte to demonstrate that actual spill light levels do not exceed the levels indicated in the approved Lighting Plan. Each external lighting luminaire a shall be situated and adjusted so that no lighting levels at the property line of the residential properties exceed 1 foot-candle and no direct beam leaves the project site. The results of these field measurements shall be submitted to the Community Development Department for approval.	
Cumulative Impact	Less Than Significant	No mitigation measures are required	Less Than Significant
5.2 AIR QUALITY			
Impact 5.2-1: The proposed project is consistent with the applicable Air Quality Management Plan	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.2-2: Construction activities associated with the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.2-3: Long-term operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.2-4: The proposed project would not expose sensitive receptors to substantial criteria air pollutant and toxic air contaminant concentrations.	Less Than Significant	No mitigation measures are required	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
Impact 5.2-5: The proposed project would not create objectionable odors.	Less Than Significant	No mitigation measures are required		Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.3 BIOLOGICAL RESOURCES				
Impact 5.3-1: Development of the proposed project could impact habitat for sensitive wildlife or plant species.	**Potentially Significant**	BIO-1	Potentially suitable habitat to support burrowing owl is present within the proposed project development footprint and adjacent areas. Prior to the initiation of construction activities, a qualified biologist shall conduct preconstruction clearance surveys for burrowing owl. These shall be conducted in accordance with the most current CDFW protocol within 30 days of site disturbance to determine whether burrowing owl is present at the site (CDFW 2012). Preconstruction surveys shall include suitable burrowing owl habitat (e.g., areas with open habitat, low slope terrain, 4-inch or greater diameter burrows) within the proposed project development footprint, brush management zone, and an appropriate buffer as required in the most recent guidelines and where legal access to conduct the survey exists. If burrowing owls are not detected during the clearance survey, no additional mitigation is required. If burrowing owls are located, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and capable of independent survival. A 500-foot no-disturbance buffer (where no work activities may be conducted) will be maintained between project activities and nesting burrowing owls during the nesting season, unless otherwise authorized by CDFW. If burrowing owl are detected during the nonbreeding season (September 1 through January 31) or confirmed to not be nesting, a 160-foot buffer no-disturbance buffer will be maintained between the project activities and occupied burrow. Alternatively, a Burrowing Owl Relocation and Mitigation Plan may be prepared and implemented to relocate nonbreeding burrowing owls from the proposed project development footprint. The plan will detail methods and guidance for passive relocation of burrowing owls from the proposed project development	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			footprint, provide monitoring and management of the replacement burrow sites, reporting requirements, and ensure that a minimum of two suitable, unoccupied burrows are available off-site for every burrowing owl burrow that is closed. Construction work may proceed after owls have been excluded from the site following accepted protocol and approval of CDFW. Results of the surveys and relocation efforts shall be provided to CDFW.	
		BIO-2	The following construction best management practices (BMPs) shall be implemented to minimize indirect impacts to special- status wildlife species during construction activities. • Avoid Wildlife Entrapment. a. Backfill Trenches. At the end of each workday, check that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled, covered, or sloped to allow wildlife egress. Should wildlife become trapped, a qualified biologist shall remove and relocate it. b. Avoid entrapment of nesting or migratory birds. All pipes or other construction materials or supplies will be covered or capped in storage or laydown areas at the end of each workday. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently. • Trash. All food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers and removed daily from the proposed project development footprint. When construction operations are completed, any remaining trash will be removed from the work area. • Lighting. Lighting along the perimeter of natural areas shall be shielded and oriented to minimize light shine into the natural areas.	

Impact 5.3-2: Development of the proposed project would cause loss of 0.62 acre of toyon chaparral, a sensitive natural community.	**Potentially Significant**	BIO-3	The following measures shall be implemented during construction activities to reduce indirect impacts to toyon chaparral, a sensitive natural community. • **Mark Disturbance Limits.** To prevent inadvertent disturbance to special-status vegetation communities outside the limits of work, the construction limits shall be clearly demarcated (e.g., installation of flagging or temporary high visibility construction fence) prior to ground disturbance activities. All construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits. Vegetation removal shall be monitored by a biologist and standard best management practices (BMPs) will be implemented. A biologist shall be contracted to perform biological monitoring during all clearing activities. The biological monitor shall carry out the following: a. Review and/or designate the vegetation removal area in the field with the contractor in accordance with the final plan. b. Be present during initial vegetation clearing and grubbing. c. Record any advertent impacts to vegetation communities outside the designated construction zone in monthly monitoring reports to be provided to the City's Community Development Department. • **Standard Dust Control Measures.** Standard dust control measures shall be implemented to reduce impacts on nearby plants and wildlife during construction. Measures may include replacing ground cover in disturbed areas as quickly as possible, frequently watering active work sites, installation of shaker plates, and suspending excavation and grading operations during periods of high winds. • **Minimize Spills of Hazardous Materials.** All vehicles and equipment shall be maintained in proper condition to minimize the potential for spills of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials during construction. Hazardous spills shall be immediately cleaned up, and the contaminated soil shall be properly handled or disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated staging area. • **Landscape Design.** Prior to installation of any landscaping, plant palettes shall be reviewed by the project biologist to minimize the effects that proposed landscape plants could have on biological resources outside of the impact footprint due to potential naturalization of landscape plants in the area	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			designated as open space. Landscape plants will not include invasive plant species on the most recent version of the Cal-IPC California Invasive Plant Inventory for the project region. All plant stock shall be fumigated for pests, including Argentine ants, just prior to bringing the plants to the site for installation. Landscape plans will include a plant palette composed of native or nonnative, noninvasive species that do not require high irrigation rates.	
Impact 5.3-3: Project development would impact vegetation that could be used for nesting by birds protected under federal and state laws. Development would not impact wildlife movement or migration corridors	**Potentially Significant**	BIO-4	The following measures shall be implemented to reduce impacts to nesting birds. Ground-disturbance and vegetation removal activities shall be avoided during nesting bird season, from approximately February 15 through August 31. If ground-disturbing and/or vegetation removal activities cannot be completed outside the nesting bird season, the following measures shall be implemented: • Surveys shall be conducted by a qualified biologist within 300 feet of disturbance areas (500 feet for raptors) within the project site no earlier than 3 days prior to the commencement of disturbance. If ground-disturbance activities are delayed, then additional predisturbance surveys shall be conducted such that no more than 3 days will have elapsed between the survey and ground-disturbance activities. Surveys need not be conducted if topography, high traffic roads, or buildings buffer the survey zone (i.e., if a commercial building occurs 100 feet away from construction, surveys would end at the limit of the building and not be required beyond). • If active nests are found (CDFW defines "active" as any nest that is under construction or modification; USFWS defines "active" as any nest that is currently supporting viable eggs, chicks, or juveniles), clearing and construction shall be postponed or halted within a buffer area established by the qualified biologist that is suitable to the particular bird species and location of the nest (typically a starting point of 300 feet for most birds and 500 feet for raptors, but may be reduced as approved by the biologist), until the nest is vacated and/or juveniles have fledged, as determined by the qualified biologist. The construction avoidance area shall be clearly demarcated in the field with highly visible construction fencing or flagging, and construction personnel shall be instructed on the sensitivity of nest areas. • A qualified biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests occur. The results of the	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			surveys, including graphics showing the locations of any active nests detected, and documentation of any avoidance measures taken, shall be submitted to the City within 7 days of completion of the preconstruction surveys or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds. • Surveys, and resulting buffers, will be repeated if construction within any phase is paused for more than 30 days.	
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.4 CULTURAL RESOURCES				
Impact 5.4-1: Development of the project would not impact an identified historic resource	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.4-2: Development of the project could impact archaeological resources	**Potentially Significant**	CUL-1	In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities, the resource must be evaluated for listing in the California Register of Historical Resources. Upon identification, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for archaeology, can evaluate the significance of the find and determine whether additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted. Level of Significance After Mitigation	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.5 GEOLOGY AND SOILS				
Impact 5.5-1: Implementation of the Proposed Project could subject residents, visitors, and off-site residential uses to landslide hazards	**Potentially Significant**	GEO-1	The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1). The proposed structures shall be supported on a layer of engineered fill reinforced with geosynthetic materials in order to provide a ductile sublayer that can accommodate earthquake-induced ground displacement and minimize transfer of the displacements to the structures. Artificial fill may be re-used as engineered fill subject to compliance with grading recommendations in the geotechnical investigation report, including but not limited to: Pockets of trash and debris may be encountered within the deeper artificial fill. If encountered, the trash and debris should be exported from the site and should not be mixed with the fill soils. Generation of oversized material (greater than 8 inches) should be anticipated. Rocks larger than 8 inches but less than 4 feet in maximum dimension may be incorporated into the engineered fill. Placement of oversized material (larger than 8 inches) shall be limited to the area measured at least 15 feet horizontally from the nearest slope face and 10 feet below finish grade or 3 feet below the deepest utility, whichever is deeper. It is recommended that where non-building areas are available, placement of oversized material should be performed in these areas. All materials utilized as engineered fill should be well-blended to create a uniform fill material prior to placement and compaction within each building pad area or slope construction. Soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.). Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		During grading operations, the Geotechnical Engineer (a representative of Geocon) should be onsite to observe that soil and geologic conditions do not differ significantly from those expected. If conditions are found to be variable, modification to the grading recommendations described herein should be implemented based on onsite observations. This may include deeper excavations to remove artificial fill or unsuitable soils, or reducing excavations where competent soil is encountered at shallower depths than anticipated. The structures shall be decoupled from the reinforced engineered fill blanket through the placement of a double layer of polyolefin sheets sandwiched between layers of clean sand, placed immediately below the mat foundation.[1] The preliminary design includes a four-foot blanket of engineered fill with geogrid reinforcement at one-foot intervals; the thickness and number of geogrid layers to be refined during final project design. Geogrids are typically made of plastic; they can be in the form of a grid or a fabric. This procedure should be continued until four layers of geosynthetic reinforcement and 4 feet of engineered fill have been placed. The double layer of polyolefin sheets sandwiched between layers of clean sand should be placed immediately above the reinforced engineered fill blanket and immediately below the mat foundation. The geosynthetic reinforcement should extend laterally a minimum distance of 5 feet beyond the building footprint areas. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
Impact 5.5-2: Minor shears observed in site sediments could be subject to some slip during a future earthquake.	GEO-1	The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1).	Less Than Significant

[1] Polyolefins include several common types of plastics, including polyethylene and polypropylene.

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		The proposed structures shall be supported on a layer of engineered fill reinforced with geosynthetic materials in order to provide a ductile sublayer that can accommodate earthquake-induced ground displacement and minimize transfer of the displacements to the structures. Artificial fill may be re-used as engineered fill subject to compliance with grading recommendations in the geotechnical investigation report, including but not limited to: Pockets of trash and debris may be encountered within the deeper artificial fill. If encountered, the trash and debris should be exported from the site and should not be mixed with the fill soils. Generation of oversized material (greater than 8 inches) should be anticipated. Rocks larger than 8 inches but less than 4 feet in maximum dimension may be incorporated into the engineered fill. Placement of oversized material (larger than 8 inches) shall be limited to the area measured at least 15 feet horizontally from the nearest slope face and 10 feet below finish grade or 3 feet below the deepest utility, whichever is deeper. It is recommended that where non-building areas are available, placement of oversized material should be performed in these areas. All materials utilized as engineered fill should be well-blended to create a uniform fill material prior to placement and compaction within each building pad area or slope construction. Soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.). Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. During grading operations, the Geotechnical Engineer (a representative of Geocon) should be onsite to observe that soil and geologic conditions do not differ significantly from those expected. If conditions are found to be variable,	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		modification to the grading recommendations described herein should be implemented based on onsite observations. This may include deeper excavations to remove artificial fill or unsuitable soils, or reducing excavations where competent soil is encountered at shallower depths than anticipated. The structures shall be decoupled from the reinforced engineered fill blanket through the placement of a double layer of polyolefin sheets sandwiched between layers of clean sand, placed immediately below the mat foundation.[2] The preliminary design includes a four-foot blanket of engineered fill with geogrid reinforcement at one-foot intervals; the thickness and number of geogrid layers to be refined during final project design. Geogrids are typically made of plastic; they can be in the form of a grid or a fabric. This procedure should be continued until four layers of geosynthetic reinforcement and 4 feet of engineered fill have been placed. The double layer of polyolefin sheets sandwiched between layers of clean sand should be placed immediately above the reinforced engineered fill blanket and immediately below the mat foundation. The geosynthetic reinforcement should extend laterally a minimum distance of 5 feet beyond the building footprint areas. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
Impact 5.5-3: Some of the artificial fill soil onsite is unsuitable for supporting the proposed structures.	**Potentially Significant**	The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California. Geocon West, Inc., June 30, 2017,* as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1). The following mitigation measures would address the geotechnical investigation's recommendations to remove artificial fill soils to appropriate depths to adequately support the proposed structures. The following specified depths are draft measurements subject to change pending final design parameters. Equivalent depths to support final project plans may	Less Than Significant

[2] Polyolefins include several common types of plastics, including polyethylene and polypropylene.

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
		be adapted and approved by the site soils engineer pending further investigation and final design.		
		GEO-2	**Building A:** Artificial fill should be removed to 177 feet amsl. Competent San Pedro Sand above 177 feet elevation amsl would not require excavation. The finished floor elevation would be 193.5 feet amsl, 16.5 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
		GEO-3	**Building B:** Artificial fill should be removed to 173 feet amsl. Competent marine sand or San Pedro Sand above 173 feet amsl would not require removal. The finished floor elevation would be 190.5 feet amsl, 17.5 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
		GEO-4	**Building C**: San Pedro Sand – considered suitable for supporting the proposed building – is expected to be exposed at the pad subgrade, which would be at approximately 185 feet amsl. The finished floor would be 191.67 feet amsl, or about 6.67 feet above the subgrade. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
		GEO-5	**Parking Structure:** It is expected that artificial fill and San Pedro Sand would be exposed at the pad subgrade. It is recommended that artificial fill be removed to an elevation of about 187 feet amsl; San Pedro Sand would not require removal. The finished floor would be approximately 193 ft amsl at least 6 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
Impact 5.5-4: Shallow soils onsite are considered expansive; thus, project development could cause hazards to people or structures.	**Potentially Significant**	GEO-6	The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California. Geocon West, Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill*	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1). Project grading would comply with recommendations of the geotechnical investigation (Geocon West 2017) to remove the upper few feet of expansive soils, and foundations and slabs shall be designed to be built upon expansive soils following the removal of shallow soils. The limits of existing fill and/or soft soil removal will be verified by the Geocon representative during site grading activities. During grading operations, the Geotechnical Engineer (a representative of Geocon) should be onsite to observe that soil and geologic conditions do not differ significantly from those expected. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
Impact 5.5-5 The proposed project could destroy paleontological resources. There are no unique geological features onsite, and project development would not destroy such a feature.	**Potentially Significant**	GEO-7	The project applicant shall retain a qualified paleontologist to monitor ground-disturbing activities in native San Pedro Sand, Lomita Marl, and Monterey Formation rock. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils could be encountered. The paleontologist shall determine, based on consultation with the City, when monitoring of grading activities is needed based on the onsite soils and final grading plans. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report. All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earthmoving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of San Pedro Sand, Lomita Marl, and Monterey Formation rock shall be collected as necessary for processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the City of Torrance Planning Division.	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.	
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.6 GREENHOUSE GAS EMISSIONS				
Impact 5.6-1: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.6-2: The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Less Than Significant	No mitigation measures are required		Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.7 HAZARDS AND HAZARDOUS MATERIALS				
Impact 5.7-1: Methane from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.7-2: Groundwater from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.7.3: Fill material within the development area from uncontrolled backfilling, including material from the former Shell site could cause a significant hazard to the environment with implementation of the proposed project.	**Potentially Significant**	HAZ-1	Prior to issuance of any permit by the City of Torrance, the project applicant shall enter into a Land Use Covenant (LUC) Agreement with the DTSC, pursuant to the CLRRA between the same parties, and have that LUC recorded by the Los Angeles County Registrar/Recorder-County Clerk. The LUC shall specify the following: • The Applicant shall develop a Response Plan and comply with the provisions contained therein as reviewed and approved by DTSC. The Response Plan	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		will be subject to DTSC's public notice requirements, which at a minimum will include the development of a community profile and the distribution of a 30-day public review notice. The Response Plan protective features shall include, but not limited to, the following features. • The hazardous materials in soil and soil vapor which are identified as posing potentially unacceptable human health risks in the Fill Material Investigation described in the Report of Findings for the project site completed by Kennedy/Jenks Consultants in August 2018. • Engineering controls will be developed in consultation with DTSC, which are required to prevent vapor intrusion from backfill soil in the mine pit into the proposed buildings at concentrations that could pose substantial health risks. The preliminary selection of engineering control is a vapor barrier cap or subslab liner. A subslab liner alone may not be sufficient to reduce vapor intrusion to acceptable levels; thus, DTSC may require one or both of the following additional options: o A subslab venting system under residential buildings, which typically consists of venting material (sand or gravel) below the subslab liner to allow soil gas to diffuse laterally to collection pipes for discharge to the atmosphere. o A subslab depressurization system under residential, typically consisting of a motorized blower to lower the air pressure under the building, which inhibits soil gases from entering the building, plus a series of collection and discharge pipes. • The DTSC shall monitor the construction of the mitigation system and the occupancy permit shall not be issued until the DTSC certifies the site as safe for occupancy. • An Operations and Maintenance (O&M) Monitoring Plan for the engineering controls. The O&M Plan shall: o Require periodic monitoring of the engineering control in perpetuity. o Require the applicant to provide a dedicated funding source for such perpetual monitoring.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		○ Identify the O&M Professional, who must be a California-registered civil engineer or engineering geologist, and who will be responsible for: (1) inspecting and monitoring the engineering controls; (2) five-year reviews; (3) preparing and signing Annual Inspection Reports and Five-Year Review Reports; and (4) preparing and signing Completion Reports for intrusive activities and cap. ○ Provide the O&M Professional with right of access to the property required to carry out their duties. • Institutional controls including, but not limited to, the following: ○ Tenants and prospective tenants shall be provided written notification of the hazardous materials in soils under the proposed development and the Land Use Covenant, engineering controls, and institutional controls in place to reduce entailing human health risks. ○ Prohibition on activities, such as drilling or excavating, that could damage the subslab liner. ○ Prohibition on activities that would disturb impacted soil without DTSC approval ○ Inspection and reporting requirements for the engineering controls in adherence to DTSC regulations. ○ Provide DTSC with right of access to the property to inspect and monitor the engineering controls. ○ Provide written notification to future buyers and tenants of the property of prohibited activities and the reasons for such prohibition. ○ A soil management plan shall be prepared that provides procedures for the effective handling of soil onsite and prompt communication of the discovery of unknown environmental features.	
		HAZ- 2 The Applicant or his contractor shall prepare a dust control plan consistent with the requirements of SCAQMD Rule 1466-Control of Particulate Emissions from Soils with Toxic Air Contaminants. The Dust Control Plan shall include at a minimum: • As approved by the SCAQMD, ambient PM10 monitoring, dust control measures, notification, signage, and recordkeeping requirements. • Alternative dust control measures, ambient dust concentration limits, and other provisions may be implemented upon approval of the SCAQMD by the Executive Officer.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			• In the event that a limited soil excavation is required during implementation of the Response Plan, as discussed in Section 5-2.21, Construction Emissions, of the Air Quality chapter, contingencies for soil excavation shall include adherence to all applicable Construction BMPs and regulatory standards.	
Impact 5.7-4: Project construction and operation would not involve hazardous emissions or use of hazardous materials posing substantial health risks to persons at schools within 0.25 mile of the project site.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.7-5: Project construction could impede emergency access to properties by way of Via Valmonte west and northwest of the project site; Operation of the project would not impede emergency access or interfere with an adopted emergency response plan.	**Potentially Significant**	TR-1	Prior to the issuance of grading permits, the project applicant shall prepare a Construction Traffic Management Plan in coordination with the City of Torrance City Traffic Engineer. The Plan, at a minimum, shall include the following: • All construction vehicles accessing the site shall be of legal weight, length, width and height unless oversize load permits are secured from the City and all other agencies through which loads will be carried. • All trucks used in the construction of this project shall travel only on Truck Routes as defined in Section 61.9.2 of the Torrance Municipal Code. • All construction traffic shall enter the site from the north via a right turn from southbound Hawthorne Boulevard. All construction traffic and shall exit the site via a right turn onto Via Valmonte and then left turn onto northbound Hawthorne Boulevard. No traffic shall be allowed on Via Valmonte west of the site and no construction truck traffic shall be allowed to travel south on Hawthorne Boulevard. • No construction vehicle(s) shall be allowed at any time to stage or queue on City streets or rights-of-way. All truck staging or queuing shall take place on-site. • Vehicle parking for all workers at the site shall be accommodated on-site with no worker parking permitted on City streets. The developer shall provide areas for worker parking at all times during construction. • Construction trucks shall not travel on any street within the City of Torrance on Saturdays and Sundays. Construction trucks shall not travel on any City street before 8:30 AM or after 4:00 PM on weekdays (Monday through Friday).	Less Than Significant

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Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Spillage of material of any kind from trucks is prohibited. All construction vehicles shall be enclosed and sealed to prevent any material spillage onto any street in the City. • Trucks and truck wheels and tires shall be cleaned before entering City streets from the site to prevent any wheel tracking or deposition of material on any City street. • Haul trucks entering or exiting public streets shall at all times yield to public traffic. • If hauling operations cause any damage to existing pavement, street, curb and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer. • All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and parking lots and will occur on-site. This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Torrance requirements.	
Impact 5.7-6: Project development would not exacerbate wildfire risks due to slope, prevailing winds, and other factors, and would not thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.7-7: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.7-8: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result	Less Than Significant	No mitigation measures are required	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
of runoff, post-fire slope instability, or drainage changes.			
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
5.8 HYDROLOGY AND WATER QUALITY			
Impact 5.8-1: During the construction phase of the proposed project, there is the potential for short-term unquantifiable increases in pollutant concentrations from the site. After project development, the quality of storm runoff (sediment, nutrients, metals, pesticides, pathogens, and hydrocarbons) may be altered.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.8-2: Development pursuant to the proposed project would increase the amount of impervious surfaces on the site and would therefore increase surface water flows into drainage systems within the watershed.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.8-3: Project development would not impede or redirect flood flows and would not risk release of pollutants due to project inundation.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
5.9 LAND USE AND PLANNING			
Impact 5.10-1: Project Implementation would not conflict with several Planning and Design Guidelines of the City of Torrance Hillside and Coastal Overlay Zone. Project development would be consistent with relevant policies of the City's General Plan	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
5.10 NOISE			

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Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
Impact 5.10-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project in excess of standards.	**Potentially Significant**	NO-1	The following measures shall be incorporated into the Project contract specification to reduce construction noise impacts to a level below significance: 1. Prior to commencement of construction activities involving heavy equipment, temporary construction noise barriers shall be constructed in the locations shown in Figure 5.10-1 of this EIR. The noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). 2. Ensure that all noise-producing project equipment and vehicles using internal combustion engines are equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that are in good operating condition and meet or exceed that original factory specification. Ensure that mobile or fixed "package" equipment (e.g., arc-welders, air compressors) are equipped with shrouds and noise control features that are readily available for that type of equipment. 3. Through contract specification the applicant and/or his contractors, shall ensure that all mobile or fixed noise-producing equipment used on the Project that are regulated for noise output by a local, state, or federal agency complies with such regulation while in the course of Project activity. 4. Implement construction noise reduction methods such as shutting off idling equipment and maximizing the distance between construction equipment staging areas and adjacent residences where feasible. 5. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors. 6. Establish and enforce construction site and access road speed limits of 15 miles per hour during the construction period. 7. Ensure that the use of noise-producing signals, including horns, whistles, alarms, and bells, be for safety warning purposes only. 8. Ensure that project-related public address or music systems are not audible at any adjacent receptor.	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			9. The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner will be established prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.	
Impact 5.10-2: Project implementation would result in long-term operation-related noise that would not exceed local standards	**Potentially Significant**	NO-2	To comply with the City and State's 45 dBA Ldn/CNEL interior noise standard, the dwelling units so designated in Table 5.10-11 (in **bolded** numbers) and depicted in Figure 7of the Noise Analysis Technical Report for the Solana Torrance Project will most likely require mechanical ventilation system or air conditioning system and possibly sound-rated windows. Prior to issuance of building permits, an interior noise analysis shall be required for those dwelling units identified in Table 5.10-11. Additionally, an interior noise analysis shall be required for residential units that are adjacent to elevators and other mechanical equipment, to ensure compliance with the City and state's 45 dBA Ldn/CNEL interior noise standard.	Less Than Significant
Impact 5.10-3: The project would not create temporary or permanent groundborne vibration and groundborne noise that result in human annoyance.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.10-4: The proximity of the project site to an airport would not result in exposure of future resident to airport-related noise	Less Than Significant	No mitigation measures are required		Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.11 PUBLIC SERVICES				
FIRE PROTECTION AND EMERGENCY SERVICES				
Impact 5.11-1: The proposed project would introduce new structures and residents into the TFD service boundaries, thereby increasing the requirement for fire protection facilities and personnel.	Less Than Significant	No mitigation measures are required		Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant

1. Executive Summary

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
POLICE PROTECTION			
Impact 5.11-2: The proposed project would introduce new structures and residents into the Torrance Police Department service boundaries, thereby increasing the requirement for police protection facilities and personnel.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
SCHOOL SERVICES			
Impact 5.11-3: The proposed project would generate approximately 45 new students who would impact the school district enrollment capacities area schools.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
LIBRARY SERVICES			
Impact 5.11-4: The proposed project would generate additional population of approximately 722 residents, increasing the service needs for the local libraries, specifically the Walteria Library Branch.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
5.12 TRANSPORTATION			
Impact 5.12-1: Project-related trip generation would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less Than Significant	No mitigation measures are required	Less Than Significant
Impact 5.12-2: Project-related trip generation in combination with baseline and proposed cumulative development would not result in	Less Than Significant	No mitigation measures are required	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
designated road and/or highways exceeding county congestion management agency service standards.				
Impact 5.12-3: Project-related construction traffic would not exceed traffic threshold volumes; however, construction could result in temporary and short-term traffic detours and disruptions.	**Potentially Significant**	TR-1	Prior to the issuance of grading permits, the project applicant shall prepare a Construction Traffic Management Plan in coordination with the City of Torrance City Traffic Engineer. The Plan, at a minimum, shall include the following: • All construction vehicles accessing the site shall be of legal weight, length, width and height unless oversize load permits are secured from the City and all other agencies through which loads will be carried. • All trucks used in the construction of this project shall travel only on Truck Routes as defined in Section 61.9.2 of the Torrance Municipal Code. • All construction traffic shall enter the site from the north via a right turn from southbound Hawthorne Boulevard. All construction traffic and shall exit the site via a right turn onto Via Valmonte and then left turn onto northbound Hawthorne Boulevard. No traffic shall be allowed on Via Valmonte west of the site and no construction truck traffic shall be allowed to travel south on Hawthorne Boulevard. • No construction vehicle(s) shall be allowed at any time to stage or queue on City streets or rights-of-way. All truck staging or queuing shall take place on-site. • Vehicle parking for all workers at the site shall be accommodated on-site with no worker parking permitted on City streets. The developer shall provide areas for worker parking at all times during construction. • Construction trucks shall not travel on any street within the City of Torrance on Saturdays and Sundays. Construction trucks shall not travel on any City street before 8:30 AM or after 4:00 PM on weekdays (Monday through Friday). • Spillage of material of any kind from trucks is prohibited. All construction vehicles shall be enclosed and sealed to prevent any material spillage onto any street in the City. • Trucks and truck wheels and tires shall be cleaned before entering City streets from the site to prevent any wheel tracking or deposition of material on any City street.	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			• Haul trucks entering or exiting public streets shall at all times yield to public traffic. • If hauling operations cause any damage to existing pavement, street, curb and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer. • All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and parking lots and will occur on-site. • This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Torrance requirements.	
Impact 5.12-4: Implementation of the proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less Than Significant	No mitigation measures are required		Less Than Significant
Impact 5.12-5: Project circulation improvements have been designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access.	Less Than Significant	No mitigation measures are required		Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.13 TRIBAL CULTURAL RESOURCES				
Impact 5.13-1: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource 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); or of such resource determined by the City of	**Potentially Significant**	TCR-1	**Retain a Native American Monitor/Consultant.** The project applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians–Kizh Nation Tribal Government and is listed under the Native American Heritage Commission's (NAHC) Tribal Contact list for the area of the project location. The monitor/consultant will only be present on-site during the construction phases that involve ground-disturbing activities. Ground-disturbing activities are defined by the Gabrieleño Band of Mission Indians–Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree	Less Than Significant

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
Torrance to be significant pursuant to criteria in Public Resources Code section 5024.1(c).			removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal representatives and monitor/consultant have indicated that the site has a low potential for impacting tribal cultural resources.	
		TCR-2	**Unanticipated Discovery of Tribal Cultural and Archaeological Resources.** Upon discovery of any archaeological resources, the project construction contractor shall cease construction activities in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians–Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians–Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request reburial or preservation for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, mitigation takes place. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," the project applicant must allot time and funding sufficient for implementation of avoidance measures or removal of the resource(s).	
		TCR-3	**Preservation in Place.** Preservation in place (i.e., avoidance) is the preferred manner of treatment for unique archaeological resources pursuant to Public Resources Code Section 21083.2(b). If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum at the University of California Los Angeles, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to a local school or historical society for educational purposes.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
		TCR-4	**Unanticipated Discovery of Human Remains and Associated Funerary Objects.** Native American human remains; that is, an inhumation or cremation in any state of decomposition or skeletal completeness, and funerary objects, or associated grave goods, shall both be treated according to California Public Resources Code Section 5097.98. Any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC), in accordance with California Health and Safety Code Section 7050.5.	
		TCR-5	**Resource Assessment and Continuation of Work Protocol:** Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law, who will then appoint a Most Likely Descendent (MLD).	
		TCR-6	**Kizh-Gabrieleno Procedures for burials and funerary remains.** If the Gabrieleno Band of Mission Indians–Kizh Nation is designated MLD, the following treatment measures shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. These remains are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. If a tribe other than the Kizh Nation is identified as the MLD, as determined by the	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			NAHC, the same procedures shall be followed pertaining to that tribal entity, if applicable.	
		TCR-7	**Treatment Measures.** Prior to the continuation of ground-disturbing activities, the land owner shall arrange a designated site within the project footprint for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe shall work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically, and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or invasive investigation of human remains. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects, and objects of cultural patrimony will be removed to a secure container on-site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.	

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
		TCR-8	**Professional Standards.** Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The qualified archaeologist shall ensure that all other personnel are appropriately trained and qualified.	
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
5.14 UTILITIES AND SERVICE SYSTEMS				
WASTEWATER TREATMENT AND COLLECTION				
Impact 5.14-1: Project-generated wastewater could be adequately treated by the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, but require infrastructure improvements.	**Potentially Significant**	USS-1	Prior to the issuance of grading permits for the proposed Project, the project applicant shall prepare and submit Sewer Plans showing the needed upsizing improvements of sewer mains for review and approval by the Los Angeles County Department of Public Works and the Los Angeles County Sanitation Districts. An increased capacity sewer trunk line of 12 inches is required to adequately accommodate new uses of the proposed project. The 12-inch line will replace 163 linear feet of 8-inch pipe in 242nd Street from the alley to Hawthorne Boulevard and 259 linear feet of 8-inch pipe Hawthorne Boulevard from 242nd Street to Pacific Coast Highway. When connecting an 8-inch or larger connection to a Districts' trunk sewer, submittal of Sewer Plans to the District for approval and review is required. The project applicant shall also provide a conditional "will serve" letter from the District, evidencing that upon compliance with all rules and regulations, there will be available trunk sewer and treatment plant capacities for the proposed Project. The project applicant shall then provide a final "will serve" letter from the District to the City of Torrance, confirming that all conditions set forth in the conditional "will serve" letter have been satisfied.	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required		Less Than Significant
WATER SUPPLY AND DISTRIBUTION SYSTEM				

Table 1-2 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.14-2: Water supply and delivery systems are adequate to meet project requirements.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
SOLID WASTE			
Impact 5.14-3: Existing and/or proposed facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant
ENERGY			
Impact 5.14-4: Project construction and operation would not cause wasteful, inefficient, or unnecessary energy consumption during project construction or operation. Project development would not conflict with a state or local plan for renewable energy or energy efficiency.	Less Than Significant	No mitigation measures are required	Less Than Significant
Cumulative Impacts	Less Than Significant	No mitigation measures are required	Less Than Significant

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. The environmental impact report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage, and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects. This draft environmental impact report (DEIR) has been prepared to satisfy CEQA and the CEQA Guidelines.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (Guidelines § 21067). The City of Torrance has the principal responsibility for consideration of the Solana Residential Development project. For this reason, the City of Torrance is the CEQA lead agency for this project. In addition, the Department of Toxic Substances Control (DTSC) will be tiering off this DEIR for the Removal Action Workplan.

The intent of the DEIR is to provide sufficient information on the potential environmental impacts of the proposed Solana Residential Development to allow the City of Torrance to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the City are described in Section 3.4, *Intended Uses of the EIR*.

This DEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, §§ 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, §§ 15000 et seq.)

The overall purpose of this DEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental effects of the development and operation of the proposed Solana Residential Development project. This DEIR addresses effects that may be significant and adverse; evaluates alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The City of Torrance determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) and Initial Study on July 27, 2017 (see Appendix A). Additionally, a public Scoping Meeting was held on August 10, 2017, in the Torrance City Hall Council Chambers. During the scoping period, the City received 209 comment letters. At the scoping meeting, 95 persons provided oral comments including requests that the public review and comment period be extended. The public review period was subsequently extended until September 18, 2017. Comments received during the initial study's public review period, from July 27, 2017 to September 18, 2017, are included in Appendix A.

The NOP process helps determine the scope of the environmental issues to be addressed in the DEIR. Based on this process and the initial study for the project, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered Potentially Significant are addressed in this DEIR, but issues identified as less than significant or of no impact are not. Refer to the initial study in Appendix A for discussion of how these initial determinations were made.

2.3 SCOPE OF THIS DEIR

The scope of the DEIR was determined based on the City's initial study, comments received in response to the NOP, and comments received at the scoping meeting conducted by the City. Pursuant to Sections 15126.2 and 15126.4 of the CEQA Guidelines, the DEIR identifies any potentially significant adverse impacts and recommends mitigation that would reduce or eliminate these impacts to levels of insignificance.

2.3.1 Impacts Considered Less Than Significant

During preparation of the Initial Study, the City of Torrance determined that three environmental impact categories were not significantly affected by the proposed project. The following environmental issues are not discussed in detail in this DEIR.

- Agriculture and Forestry Resources
- Mineral Resources
- Population and Housing

2.3.2 Potentially Significant Adverse Impacts

The City of Torrance determined that 14 environmental issues have potentially significant impacts if the proposed project is implemented.

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Services Systems

2.3.3 Unavoidable Significant Adverse Impacts

This DEIR identifies no significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The City must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable.

2.4 INCORPORATION BY REFERENCE

The documents listed below are incorporated by reference into this DEIR, consistent with Section 15150 of the CEQA Guidelines, and they are available for review at the City of Torrance City Clerk's Office and Permit Center, 3031 Torrance Boulevard, Torrance, CA 90503.

- *General Plan Update Draft Environmental Impact Report*, prepared by City of Torrance, 2009.
- *City of Torrance General Plan*, prepared by City of Torrance, 2010.

2.5 FINAL EIR CERTIFICATION

This DEIR is being circulated for public review for 45 days. Interested agencies and members of the public are invited to provide written comments on the DEIR to the City at the mailing and email address shown on the title page of this document. Upon completion of the 45-day public review period, the City of Torrance will review all written comments received and prepare written responses for each. A Final EIR (FEIR) will incorporate the received comments, responses to the comments, and any changes to the DEIR that result from comments. The FEIR will be presented to the City of Torrance for consideration and potential certification as the environmental document for the project. All persons who comment on the DEIR will be notified of the availability of the FEIR and the date of the public hearing before the City.

The DEIR is available to the general public for review at the following locations:

- City of Torrance City Clerk's Office and Permit Center, 3031 Torrance Boulevard, Torrance, CA 90503
- Katy Geissert Civic Center Library, 3301 Torrance Boulevard, Torrance, CA 90503
- Walteria Library, 3815 W 242nd Street, Torrance, CA 90505
- Palos Verdes Library District, 701 Silver Spur Road, Rolling Hills Estates, CA 90274
- City of Torrance Community Development Department website: http://www.torranceca.gov/our-city/community-development/planning/butcher-solana

2.6 MITIGATION MONITORING

Public Resources Code, Section 21081.6, requires that agencies adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring Program for the Solana Residential Development Project will be completed as part of the Final EIR, prior to consideration of the project by the Torrance City Council.

3. Project Description

3.1 PROJECT LOCATION

The proposed project site is on the southern boundary of the City of Torrance at the northern foot of the Palos Verdes Hills in southwestern Los Angeles County. The nearest freeway to the site is Interstate 110 (I-110 or the Harbor Freeway) approximately 3.9 miles to the east via Pacific Coast Highway (SR-1). The two nearest state highways to the project site are SR-1, approximately 0.7 mile to the north, and SR-107, Hawthorne Boulevard, also approximately 0.7 mile to the north.[1] Local access is provided by Hawthorne Boulevard, with secondary access from Via Valmonte. The northern part of the southwest site boundary is bounded by the City of Palos Verdes Estates, and the southern part by the City of Rolling Hills Estates (see Figure 3-1, *Regional Location, Local Vicinity, and Aerial Photograph*).

The project site is 24.68 acres at the southwest corner of Hawthorne Boulevard and Via Valmonte. The site is private property, signed and fenced; there are no sanctioned public access points to the site. However, it should be noted, that public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance. The project site includes Assessor's Parcel Numbers (APNs) 7547-001-018, 7547-001-019, 7547-001-020, 7547-001-021, 7547-002-011, 7547-001-007, 7547-001-008, 7547-001-009, 7547-001-024, 7547-001-025, 7547-001-026, 7547-002-005, 7547-002-006, 7547-002-007, 7547-002-008, 7547-002-009, 7547-002-010. The site is approximately 1,480 feet long northwest to southeast, approximately 860 feet east to west at its widest point (see Figure 3-1) and is commonly referred to locally as "Butcher Hill," after the family name affiliated with ownership of the majority of the project site parcels.

3.2 STATEMENT OF OBJECTIVES

Objectives for the Solana Residential Development project will aid decision makers in their review of the project, the project alternatives and its associated environmental impacts:

1. Transform a dormant, former surface quarry into a productive land use while preserving the majority of the site as natural, open space.
2. Develop first class, modern housing options that meet the needs for market-rate housing and evolving household demographics in Torrance.
3. Provide short-term construction employment opportunities in the South Bay region and long-term housing in Torrance.

[1] A 4.8-mile segment of Hawthorne Boulevard from SR-1 in Torrance to Redondo Beach Boulevard in the City of Redondo Beach is designated SR-107.

4. Provide additional residential opportunities that are consistent with the scale and intensity of the existing land uses along Hawthorne Boulevard.
5. Establish a high-quality architectural community that enhances the area through new development and landscaping along a high visibility corridor.
6. Resolve existing hazardous conditions in an economically feasible way.
7. Preserve significant hilltop open space and retain public access.
8. Cluster development to minimize the overall development footprint.
9. Contribute to diverse housing stock.

3.3 EXISTING LAND USE

The site is primarily vacant and consists partly of disturbed (bare) land; the balance of the site is vegetated with nonnative grassland, undisturbed and disturbed coastal sage scrub, chaparral, and mustard vegetation. A 200- to 250-foot-high, north-facing former quarry slope extends diagonally across the site from the southeast corner of the site to the northwest corner; the slope then continues northeast from near the northwest site boundary, diminishing in height, to near the northeast site boundary (see Figures 3-2, *Project Site Topographic Map;* 3-3, *Site Photographs, Development Area,* and 3-4, *Site Photographs, Proposed Open Space Area*).

3.3.1 Site History

The site was used from the early 1900s to the late 1950s as a diatomaceous earth mine.[2] The steep slope, up to 250 feet high in the middle of the site, is a remnant from the mining operation. The process of backfilling the previous mining pit has been ongoing since the 1960's. In late 2008 and mid-2009, the former quarry mining pit was returned to surface grade with uncontrolled fill using a combination of existing onsite-sourced quarry tailings and fill material imported from other construction projects in the Palos Verdes area (Kennedy/Jenks 2018). The artificial fill is present up to approximately 80 feet deep (Geocon West 2017).

3.3.2 Topography

The site is at the foot of the north-facing slopes of the Palos Verdes Hills. The southwest part of the site ranges in elevation from approximately 460 feet above mean sea level (amsl) down to approximately 330 feet amsl at the southeast corner of the site. A steep slope remaining from the mining operations, up to 250 feet high, extends across the site generally east-west from the southeast corner of the site to the northwest corner. The depth of soil disturbance within the mining site ranges from about 75 to 311 feet. The 5.71development area, mostly in the northeast quadrant of the site, consists of two pads—one approximately 190 to 220 feet amsl and the other approximately 235 to 245 feet amsl. The southeast quadrant of the site gradually slopes eastward toward Hawthorne Boulevard. The northernmost part of the site slopes upward toward single-family homes

[2] Diatomaceous earth is a soft, easily pulverized sedimentary rock consisting of fossilized remains of diatoms, a type of hard-shelled algae. Uses of diatomaceous earth include filters, abrasives, absorbents for liquids, and cat litter.

offsite south of Via Valmonte; that slope is also a mining remnant. Elevations on the northwest site boundary range up to approximately 340 feet amsl (see Figure 3-2).

3. Project Description

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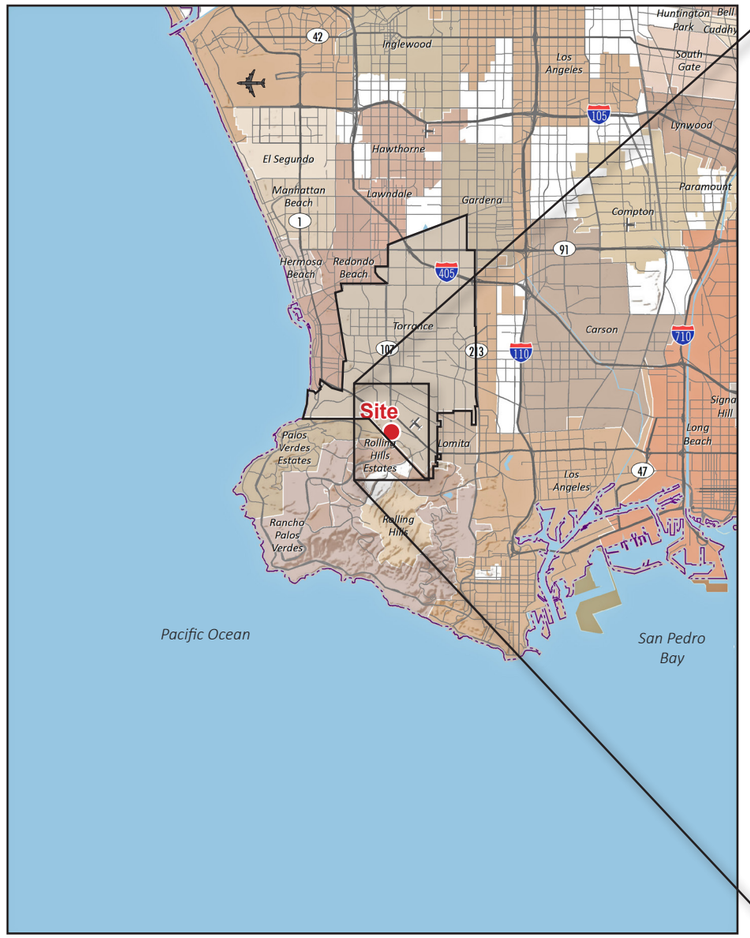
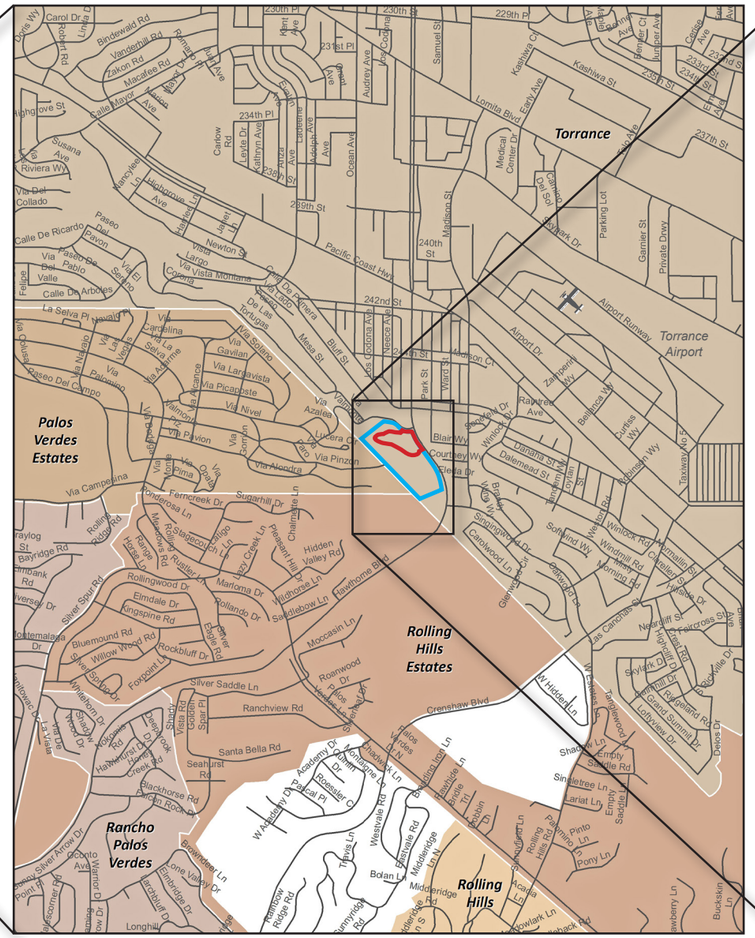
Figure 3-1 - Regional Location, Local Vicinity, and Aerial Photograph

3. Project Description

Regional Location



Local Vicinity



Aerial Photograph

Note: Unincorporated county areas are shown in white.

Source: ESRI, USGS, NOAA, 2017; Google Earth Pro, 2017

3. Project Description

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Figure 3-2 - Project Site Topographic Map
3. Project Description

Source: USGS, 2017

3. Project Description

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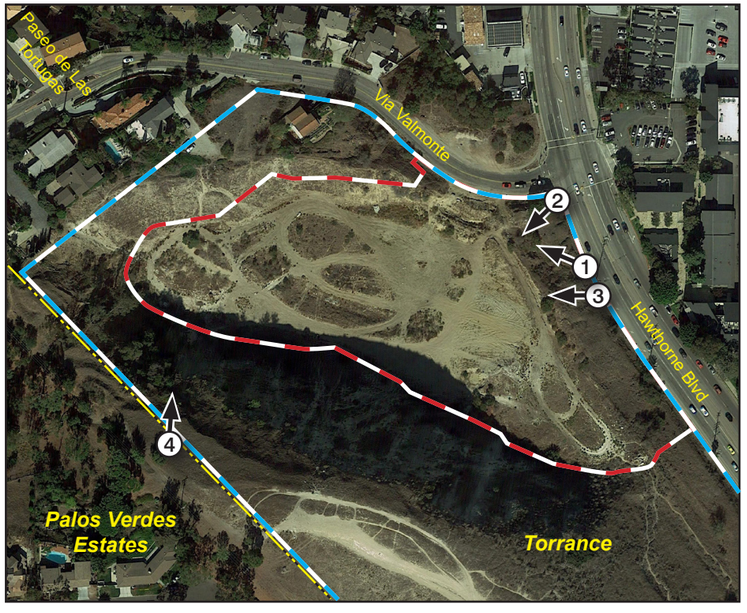
Figure 3-3 - Site Photographs, Development Area

① View from near the north site boundary looking west at Slope 1 abutting the north development area boundary; the house atop the slope is offsite.

② View from near the north site boundary looking west at Slope 3; the development area is in front of the slope.

Key Map



③ View looking west from the west part of the development area. The relatively flat ground in the foreground is part of the development area; Slope 1 is on the right, and Slope 3 the left.

④ View looking north and down at the northwest part of the development area and Slope 1 from the central part of the hilltop in the proposed Open Space Area.

Key Map Source: Google Earth Pro, 2017

3. Project Description

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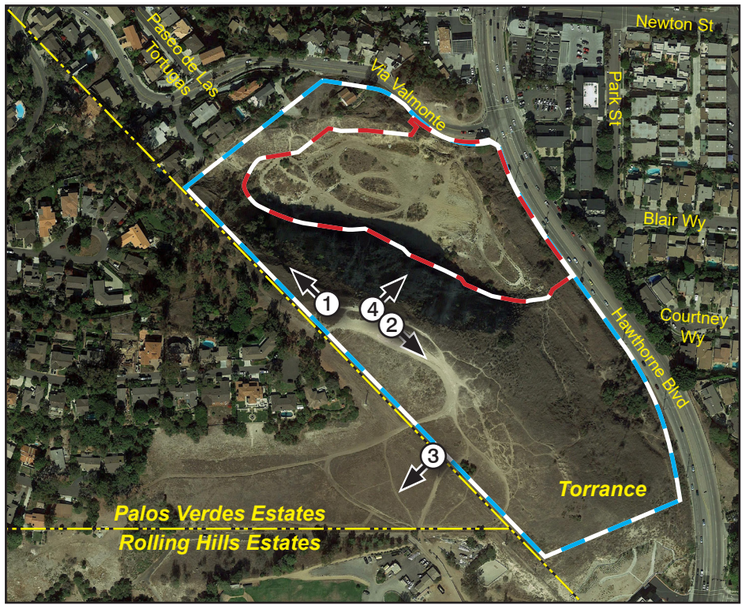
Figure 3-4 - Site Photographs, Proposed Open Space Area

① View looking northwest from the northwest part of the hilltop in the Open Space Area. The Pacific Ocean is in the center background.

② View looking southeast from the northwest part of the hilltop in the Open Space Area. Part of the Palos Verdes Hills is in the right background.

Key Map



① Photo Location and Direction

Project Site

Development Area

City Boundary

0 600

Scale (Feet)

③ View looking southwest from the central part of the hilltop in the Open Space Area of part of Ernie Howlett Park; part of the Palos Verdes Hills is in the background.

④ View looking northeast from the northwest part of the hilltop in the Open Space Area.

Key Map Source: Google Earth Pro, 2017

3. Project Description

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3.3.3 Vegetation

The project site is primarily undeveloped and includes various vegetation and land cover types onsite. The biological resources technical report, which surveyed the project site and a 500-foot buffer, found that the vegetation types in the project site are, in order by decreasing acreage, mustard, nonnative grassland, disturbed land, undisturbed and disturbed coastal sagebrush, developed land, chaparral, and ornamental vegetation. Lot 1, the lot to be developed, is a portion of the site along the northeast site boundary consists partly of a leveled and paved parking area and retaining walls constructed adjacent to some of the residences next to the site. Within the proposed 5.71-acre project development area, the vegetation and land cover types are, in order by decreasing acreage, nonnative grassland, disturbed land, chaparral, coastal sagebrush, mustard, developed land, and ornamental vegetation (Dudek 2017). According to the biological report, there are no mature trees located within Lot 1.

3.4 SURROUNDING LAND USE

The project site is surrounded by single-family residences to the east and northeast across Hawthorne Boulevard and a senior living development next to the southeast site boundary. Across Hawthorne Boulevard east of the site are multitenant commercial uses, including office buildings and the Hillside Village Shopping Center. Next to the southwest site boundary, from south to north, are: Ernie Howlett Park (which includes a City maintenance yard) in the City of Rolling Hills Estates; City of Palos Verdes Estates city parkland; and single-family residences in the City of Palos Verdes Estates. The northwest site boundary is surrounded by four single-family homes south of Via Valmonte and additional single-family homes north of Via Valmonte, all in the City of Torrance (see Figure 3-1).

Zamperini Field Airport, formerly known as Torrance Municipal Airport, is approximately 0.5 mile to the northeast. Ernie Howlett Park is part of the site of the former Palos Verdes Landfill that operated from 1952 to 1980 (LACSD 1995).

3.5 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means:

> ... the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700. (3) An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. (14 Cal. Code of Reg. § 15378[a])

3.5.1 Description of the Project

3.5.1.1 PROPOSED LAND USE

The project would involve the consolidation of 17 parcels into three lots. Lot 1 would be within the footprint of the former diatomaceous earth mine and would be 5.71 acres in area. Lot 2 would be along the bluff immediately above the former diatomaceous earth mine and would be 6.0 acres in area. Lot 2's southern extent is below the edge of the bluff top of Slope 1 and Slope 3 and is primarily comprised of the bluff face and slope. Lot 2 surrounds Lot 1 on all sides from the Via Valmonte frontage to the north and Hawthorne frontage to the east. As such, Lot 2 would be comprised almost entirely of slopes and bluff-face. Lot 3 would be primarily comprised of the level blufftop to the south of Lot 2 and would be 12.92 acres in area. Figure 3-5, *Tentative Tract Map,* depicts the proposed new lots. Under the proposed project, all of the site development would occur in Lot 1, and Lots 2 and 3 would be preserved as undeveloped open space, for a total of 18.92 acres, with the 12.92 acres of Lot 3 maintained in its current state and allow public access.

Based on a site-specific investigation performed by Geocon West, diatomaceous soils are primarily confined to Lot 2, with several minimal areas in Lot 1 where it abuts Lot 2 (Geocon West Inc. 2018a). Lot 1 is predominantly filled with artificial fill and Pleistocene age sediments consisting of Marine Sand and San Pedro Sand. Based on the grading plans, the majority of the areas of diatomaceous soils within Lot 1 would either 1), have fill material place over them, 2) will be left in place and not disturbed. In summary, there is only one localized area on Lot 1 (southwest corner of the proposed parking structure) where 3 to 6 feet of slough would be disturbed (excavated) as part of the grading operations. Therefore, only minor, very localized areas of potentially diatomaceous soils will be disturbed as part of the proposed grading.

The development of Lot 1 consists of construction of 248 apartment units in three 5-story buildings, each consisting of four residential floors above a ground-level parking garage (Building A has semi-subterranean parking), and the development of an 89,545-square foot, 242-space, 6-story parking structure that would include a roof deck with a pool and spa area. Additionally, the proposed project would include a 4,980-square-foot community room/gym and approximately 96,385 square feet of landscaped open space. The three residential buildings with garages total 371,309 square feet. The footprints of the four buildings would total 109,400 square feet or approximately 2.5 acres. The entire project totals 460,854 square feet of gross building area and would have a floor area ratio (FAR) of 0.21 and 10.0 dwelling units per acre for the site as a whole. When viewed as an independent parcel, Lot 1 would have a FAR of 0.90 and a proposed project density of 43.4 dwelling units per acre. Grading is currently estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export.

The proposed project is requesting approval of a general plan amendment to change the land use designation from Low-Density Residential (0-9.0 dwelling units per acre) to Low-Medium-Density Residential (9.10-18.0 dwelling units per acre); a zone change from A-1 (Light Agricultural) (Hillside Overlay District) to PD (Planned Development) (Hillside Overlay District); a conditional use permit, precise plan of development and planned development, and vesting tentative tract map.

Apartment Buildings

The 248 residential apartments would be developed in three 5-story buildings. The first level of each building would include ground level parking, with the exception of Building A, which would be semi-subterranean, and ground floor lobbies, with four residential floors on the second through fifth floors. The units would be one- and two-bedroom units, with one-bedroom units ranging from 705 to 745 gross square feet each and two-bedroom units ranging from 1,110 to 1,200 gross square feet each. Units by size per building are listed in Table 3-1. Building A would be in the west part of the development area, Building B in the north-central part, and Building C in the southeast part (see Figure 3-6, *Site Plan*).

Table 3-1 Proposed Apartment Units by Unit Size and Building

	Building Height (feet)	1-bedroom unit	2-bedroom unit	Unit Total	Residential (Square Feet)	Parking Garage (Square Feet)	Total (Square Feet)
Building A	65	53	35	**88**	98,411	25,947	**124,358**
Building B	65	57	43	**100**	121,897	33,950	**155,847**
Building C	65	25	35	**60**	72,179	18,925	**91,104**
	Total	**135**	**113**	**248**	292,487	78,822	**371,309**

Building exteriors would consist of stucco and trespa, a laminate made of wood-based fiber and resin. All units would have balconies with metal railings. Building A's and B's finished floor elevation would be approximately 190.5 to 193.5 amsl and Building C's finished floor elevation would be approximately 191.67 amsl (Kennedy/Jenks 2018). The buildings would each be 65 feet high from ground-level finished floor to rooftop, as shown in Figures 3-7a, *Building A Elevations,* 3-7b, *Building B Elevations* and 3-7c, *Building C Elevations*.

Based on the Geocon West geotechnical investigation, Lot 1 would be graded to the following pad elevations:

- Buildings A and B – The finished floor elevation will range from 190.5 to 193.5 feet amsl. Existing artificial fill will be excavated to an elevation of approximately 173 to 177 feet amsl and properly compacted for support of the reinforced engineered fill blanked and proposed foundation.

- Building C – The finished floor elevation will be 191.67 feet amsl. San Pedro Sand is present in this area, requiring removal of this native material to bring elevations to the finished floor elevation. The San Pedro Sand is considered suitable for direct support of the reinforced engineered fill blanket and proposed foundation system.

- Parking Structure – The finished floor elevations vary between 190.75 and 193.9 feet MSL beneath the proposed structure. Both artificial fill and San Pedro Sand are present in this area, therefore existing artificial fill will be excavated to an elevation of approximately 187 feet MSL and properly compacted for support of the reinforced engineered fill blanket, and proposed foundation. Where competent San Pedro Sand is exposed at the excavation bottom, it is considered suitable and will not require excavation to an elevation of 187 feet MSL.

As described above, Lot 1 is not balanced and will require a net export of 119,270 CY of soil. In addition, a 4-foot layer of clean fill will be placed across the entire Lot 1 to address potential hazardous material concerns.

It is anticipated that this fill material will consist of the competent native materials excavated to obtain the above-referenced pad elevations associated with the development.

Access, Circulation, and Parking

Site access would be via two driveways: the main entrance would be via a right-in-right-out only driveway from Hawthorne Boulevard approximately 185 feet south of the intersection of Hawthorne Boulevard with Via Valmonte. The second driveway would be a right-out only along Via Valmonte approximately 180 feet west of the same intersection (see Figure 3-6, *Site Plan*).

The drive aisles extending west from Hawthorne Boulevard and west and south from Via Valmonte would intersect in the center of the site. A third drive aisle would extend west from that intersection around the south side of Building A to a parking lot in the west end of the development area (see Figure 3-6).

Parking would be provided in an 82 foot high, six-story parking structure in the south-central part of the site (see Figure 3-8, *Parking Structure (Building D) Elevations*), ground-level parking garages in each of the three apartment buildings (Building A is semi-subterranean), and surface parking totaling 484 spaces. The parking structures would be naturally ventilated. The 45 surface parking spaces would consist of 22 perpendicular spaces alongside two of the site drive aisles, and 23 spaces in a lot in the west end of the development area. The City of Torrance Land Use Code, Section 93.2.3, establishes a minimum parking ratio for multifamily residential uses of two bedrooms or less as two off-street parking spaces per unit, and one guest space per every five units. As the project includes a request for the establishment of a PD zone for the site, the applicant is proposing to set a reduced parking standard for a one-bedroom unit. The proposed project would provide off-street parking at a ratio of 1.54 space per one-bedroom unit, two spaces per two-bedroom unit, and one guest parking space per every five units. Table 3-2 provides the available parking for each building and surface parking.

Table 3-2 Proposed Parking

Structure/Lot	Spaces
Garage, ground level, Building A	62
Garage, ground level, Building B	86
Garage, ground level, Building C	49
Subtotal, garages	**197**
Parking Structure; Building D	242
Surface Parking	45
Total	**484**

Open Space and Landscaping

Development Area

The site plans include 96,385 square feet of landscaping, all of which would be along the Lot 1 development area perimeter and around the perimeters of the four buildings.

The development in Lot 1 would include 24,500 square feet of common-area decks consisting of podium (2nd level) and roof decks and 15,040 square feet of private patios, for a total of 39,540 square feet of common and

private patios (see Figure 3-09, *Open Space Plan*). A 5,000-square-foot community room would be along the southern portion of Building B.

Lot 2 and Lot 3

The project would preserve the balance of the site (Lots 2 and 3), 18.92 acres, as open space that will remain its current state. As noted above, Lot 2 is 6.0 acres and would be comprised almost entirely of slopes and bluff face. Of that 6.0 acres of Lot 2, a 0.99-acre area would be maintained by as a brush management zone pursuant to California Public Resources Code Sections 4291 et seq. and California Fire Code Chapter 49, Requirements for Wildland-Urban Interface Fire Areas, which requires that brush, flammable vegetation, or combustible growth within 100 feet of occupied buildings be removed. The remaining 12.92 acres of Lot 3 would be maintained its current state with no additional measures taken to restrict public access.

Impervious Areas

The proposed project will have a net increase in total impervious area compared to the existing condition of the site. Currently, the project site consists of a primarily vacant lot with a total imperviousness percentage of 1 percent and perviousness of 99 percent. The proposed mixed-use project increases the site's overall total imperviousness percentage to 45 percent and decreases perviousness to 55 percent. The project proposes development of buildings with a total footprint of approximately 109,400 square feet or 2.51 acres and approximately 64,383 square feet (1.48 acres) of driveways and surface parking, for a total of about 173,783 square feet (3.98 acres) of impervious area.

Setbacks

The project design includes setbacks to protect people and structures onsite from slope instability—such as rockfalls—and to limit flammable vegetation to reduce wildfire danger.

California Building Code Required Setback

The California Building Code (CBC) requires that foundations be set back from an ascending or descending slope. The required setback from an ascending slope is 1/2 the height of the ascending slope with a maximum of 15 feet measured horizontally from the exterior face of the structure to the toe of the slope. Where a retaining wall is used, the setback is measured from a projected toe of slope. The CBC setback from the development area property line along the south side of the development area ranges from approximately 66 feet wide near the west end of Building A to approximately 70 feet wide near the east end of Building A, and from approximately 58 feet wide near the west end of Building C to approximately 32 feet wide near the east end of Building C. The CBC setback along the north side of the development area is approximately 24 feet wide near the west end of Building A and approximately 14 feet near the east end of Building A. CBC setback is not required for Building B since it is not located next to an ascending or descending slope (see Figure 3-6). The proposed project complies with these setbacks.

Rockfall Setback

A rockfall setback of 40 horizontal feet, combined with a rockfall catchment area or containment barrier, would be developed along the south side of the development area. The rockfall setback is narrower than the CBC

setback along the south side of Building A; the two setbacks are nearly the same width along the south side of Building C (see Figure 3-6).

Brush Management Zones

A brush management zone would extend 100 feet from the residential building exteriors (Buildings A, B, C) and would encompass approximately 0.99 acre of the project site (see Figure 3-6).

Retaining Walls and Rockfall Barriers

The site plan includes retaining walls that would extend 11 to 47 feet above grade on the upslope-facing side of the walls, with the above-grade portion of the wall functioning as a rockfall barrier to stop rolling rocks. Retaining walls would be stabilized with soil nails, that is, metal bars inserted into drilled holes in the slope and then grouted into place.

The part of the rockfall setback upslope from the retaining wall/rockfall barrier would be graded to create a 2.5-foot-wide concrete ditch next to the wall, followed by a nearly level area ("bench") approximately 10 feet wide to permit access to remove naturally occurring slough. The remaining upslope width of the rockfall setback would be graded to a slope of no more than 2:1 (horizontal: vertical) (see Figure 5.5-5, *Retaining Wall and Rockfall Barrier on Slope 3/Building C*, in Section 5.5, *Geology and Soils*, of this DEIR).

The Building Code requires that foundations be sufficiently setback from an ascending or descending slope. The required setback from a descending slope with a steeper than 3:1 and gentler than 1:1 is ⅓ the height of the descending slope with a minimum of 5 feet and a maximum of forty feet measured horizontally from the exterior face of the foundation to the slope face. Where the slope is steeper than 1:1, the slope setback shall be measured from an imaginary line projected at 45 degrees from the toe of the slope upwards. In lieu of relocating a structure to achieve the setback at the ground surface, foundations may be deepened as necessary to achieve the required setback. Based on the latest set of development plans, the Building Code setbacks will be satisfied for Buildings A, B, and C. It is our understanding that the City of Torrance may consider alternate slope setback criteria for the parking structure based on the findings of the slope stability and rockfall hazard analysis presented in the Preliminary Geotechnical Investigation report.

The geotechnical investigation report designates three slopes above the development area.

Slope 1, above the north side of the development area, adjacent Via Valmonte, ranges 40 to 80 feet high with grades of 1.25:1 to 1.5:1 (horizontal: vertical).

Slope 2, above the northeast side of the development area, adjacent Hawthorne Boulevard, is approximately 50 feet in height with grades of 2:1 to 1.5:1 (horizontal: vertical).

Slope 3, above the south and southwest sides of the development area, ranges from 200 to 250 feet high. The face of slope 3 has been graded to a uniform grade between approximately 0.84:1 to 0.9:1 (horizontal: vertical) (see Figures 3-10, *Slopes Map*).[3]

The proposed residential development would be built adjacent Slope 1 and Slope 3, and Slope 2 would be removed during project development.

Slope 1

Building A

The retaining wall/rockfall barrier would be about 19 feet high, approximately 16 feet of which would be above the finished grade facing the apartment building; and would be set back about 11 feet from the northwest wall of the building (see Figure 5.5-8, *Retaining Wall and Rockfall Barrier on Slope 1/Building A*, in Section 5.5, *Geology and Soils*, of this DEIR).

Slope 3

Building C

The retaining wall/rockfall barrier south of Building C would be approximately 50 feet high, with the retaining wall extending 47 feet above the finished grade facing the apartment building, and the rockfall barrier extending 7 feet above the proposed grade facing the hillside. The retaining wall/barrier would be set back about 11 feet from the exterior wall of the first floor of the building containing a parking garage (see Figure 5.5-5, *Retaining Wall and Rockfall Barrier on Slope 3/Building C*, in Section 5.5, *Geology and Soils*, of this DEIR).

Parking Structure (Building D)

On the south side of the parking structure (Building D) the exterior wall of the parking structure would function as both retaining wall and rockfall barrier, and no separate wall or barrier would be built. The hillside slope next to the parking structure wall would be graded as described above (see Figure 5.5-6, *Slope 3/Exterior Parking Structure Wall*, in Section 5.5, *Geology and Soils*, of this DEIR).

Building A

The retaining wall/rockfall barrier would be about 15.2 feet high, about 13.7 feet of which would be above the finished grade facing the apartment building, and would be set back about 47 feet from the south wall of Building A (see Figure 5.5-7, *Retaining Wall and Rockfall Barrier on Slope 3/Building A*, in Section 5.5, *Geology and Soils*, of this DEIR).

Proposed Roadway Improvements

The proposed project includes the following proposed roadway improvements, as shown on Figure 3-11, *Proposed Roadway Improvements*:

[3] The above-described horizontal: vertical grade is calculated from the grade of 48 to 50 degrees reported in the geotechnical investigation report.

- On Via Valmonte: Widening of the eastbound Via Valmonte approach to its intersection with Hawthorne Boulevard to provide an additional travel lane for optional left turn, through movement, or right turns. This improvement will include a new roadway surface, curb, gutter, sidewalk, and parkway on the south side of Via Valmonte, a new crosswalk across Via Valmonte at Hawthorne Boulevard, and new accessible ramps on the northwest and southwest corners of the intersection, as well as modifications to the traffic signal at the Via Valmonte/Hawthorne Boulevard intersection.
- On Hawthorne Boulevard: Widening and restriping a traffic lane to add a southbound right turn lane between Via Valmonte and the proposed driveway for vehicles to decelerate and enter the project site. This improvement will include a new sidewalk contiguous to the street curb, a landscaped parkway between the sidewalk and the project property line wall, and modifications to the traffic signal at the Via Valmonte/Hawthorne Boulevard intersection.
- At the intersection of Hawthorne Boulevard and Via Valmonte: "Splitting" the eastbound and westbound movements (designating the eastbound movement as the lead) and adding a left turn arrow to the eastbound approach on Via Valmonte. This will allow all eastbound vehicles (far greater in volume than the westbound) to clear first, followed by the westbound movement from the shopping center driveway.

Utilities

The City of Torrance will require that installation of utilities will be undergrounded.

Water

Project construction would include construction of the following two networks of water pipes, including one network of fire flow water pipes ranging from 8- to 12-inch diameter and connecting to an existing 12-inch water line in Via Valmonte, and one network of polyvinyl chloride (PVC) domestic water mains ranging from 4- to 6-inch diameter connecting to an existing 10-inch water main in Hawthorne Boulevard (see Figure 3-12, *Utilities Plan*). Water laterals from the proposed apartment buildings would connect to the main in Hawthorne Boulevard. City of Torrance Water Services would provide water to the project.

Sewers

Project development would include construction of sewers connecting to an eight-inch sewer main in Via Valmonte. One proposed eight-inch sewer main would extend to the middle of the project site, then extend east and southeast, ending just west of the middle of Building C. Sewer laterals from the proposed apartment buildings would connect to the main (see Figure 3-12, *Utilities Plan*). The project also includes the upsizing from two 8-inch to a 12-inch lines for 163 linear feet at the 242nd Street segment of the sewer system from the alley to Hawthorne Boulevard and for 259 linear feet in Hawthorne Boulevard from 242nd Street to Pacific Coast Highway. Therefore, the existing sewer mains are undersized and will require improvements to accommodate the increase. Sewers will need to be upsized to a 12" VCP. The total upsize length is 422 linear feet

Storm Drainage and Water Quality

The project includes a set of proposed storm drains and underground detention tanks. The proposed storm drainage system would connect to an existing storm drain in Via Valmonte immediately west of its intersection

with Hawthorne Boulevard (see Figure 3-13, *Proposed Drainage Plan*). The project includes two proposed off-site drainage improvements:

1. An expanded catch basin in the south gutter of Via Valmonte immediately west of its intersection with Hawthorne Boulevard.
2. Replacement of an existing 18-inch RCP storm drain from the aforementioned catch basin approximately 16 feet north to an existing 30-inch storm drain in Via Valmonte.

Both proposed off-site drainage improvements would be built within a developed roadway. Construction impacts would be addressed by the standard City requirements for dust and erosion control, noise, and other requirements as may be placed on the encroachment permit allowing construction in Via Valmonte.

Project Phasing

Construction

Project construction phasing is described below. Construction overall is anticipated to last about 2.5 years (January 2020 to June 2022). Grading is currently estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. Assuming a haul truck capacity of 16 CY per truck, earth-moving activities would result in approximately 7,455 round trips (14,910 one-way truck trips) during the grading phase.

Grading, 3.5 months (January to April 2020). Construction equipment: 2 excavators and one loader.

Building Construction, Parking Garage, 7.5 months (May 2020 to December 2020). Construction equipment: 2 tractors/loaders/backhoes.

Paving, 2 months (June to August 2020). Construction equipment: 1 paver, 1 paving equipment, 1 roller.

Building Construction, Residential, 18 months (December 2020 to June 2022). Construction equipment: 1 crane, 2 forklifts, 1 welder.

Architectural Coating, 3 months (March 2022 to June 2022).

Operation

Project operation would employ approximately five full-time workers for management and maintenance of the development.

Discretionary Permits

The project includes requests by the project applicant for the following discretionary actions by the City of Torrance.

General Plan Amendment

The proposed project would require a General Plan Amendment (GPA16-00001). The applicant is requesting to change the land use designation from Low-Density Residential (R-LO) to Low-Medium-Density Residential

(R-LM) as the proposed 10.0 du/ac density for the site as a whole would exceed the maximum allowable 9.0 du/ac density for the existing R-LO designation. If viewed as an independent parcel, Lot 1's proposed 43.4 du/ac would require a Medium-High Residential (R-MH) designation which allows a density range of 31.1-44 du/ac. In this scenario, the remainder of the site would be designated as Public/Quasi-Public/ Open Space (PUB).

Zone Change

Additionally, the project applicant is seeking a zone change (ZON16-00001) from A-1 (Light Agricultural) (Hillside Overlay District) to PD (Planned Development) (Hillside Overlay District) (PUD16-00001). All property within a PD District shall be used only for those purposes permitted by the General Plan of the City and any Development Plan approved by the City (Torrance Municipal Code Section 91.42.1). The Hillside Overlay District sets forth the following requirements for planning and design of construction, remodeling, and enlargement projects in the Overlay District:

- The proposed development will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity.
- The development has been located, planned, and designed so as to cause the least intrusion on the views, light, air and privacy of other properties in the vicinity.
- The design provides an orderly and attractive development in harmony with other properties in the vicinity.
- The design will not have a harmful impact upon the land values and investment of other properties in the vicinity.
- Granting such application would not be materially detrimental to the public welfare and to other properties in the vicinity.
- The proposed development will not cause or result in an adverse cumulative impact on other properties in the vicinity.

Conditional Use Permit

A conditional use permit (CUP) is required for approval of multiple residential developments (that is, multifamily residences or condominiums) of more than three stories in height or having more than 100 units, or a density greater than 27) units per acre (Torrance Municipal Code Section 95.3.28). The proposed project meets all three criteria and therefore requires a CUP (CUP16-00004): the buildings would be five stories high; the development would comprise 248 units; and the density on the 5.71-acre development area would be 43.4 units per gross acre when Lot 1 is viewed independently.

Precise Plan of Development

The proposed project would require a Precise Plan. Precise plans of development are required for any developments in the Hillside Overlay, with specified exceptions. A precise plan may include:

- Provisions for the utilization of land and the utilization and design of buildings and other improvements, the height and bulk of buildings, and the open spaces approximately buildings.
- Limitations on the location of buildings and other improvements with respect to existing or planned rights-of-way and establishing precise locations for planned rights-of-way.
- Such other matters which will accomplish the systematic execution of the general plan and promote good planning. (Torrance Municipal Code Section 96.2.2)

Vesting Tentative Tract Map

A tentative map as defined by the State Subdivision Map Act is a map made for the purpose of showing the design and improvement of a proposed subdivision and the existing conditions in and around it (California Government Code Section 66424.5). The project site is currently comprised of 17 parcels and the proposed project would require a Vesting Tentative Tract Map approval to consolidate these parcels into three parcels (Lot 1, 2 and 3). Lot 1 would be the 5.71-acre development area for the project, Lot 2 would be 6.0-acre area located along the blufftop and would contain the 0.99-acre brush management zone, and Lot 3 would be the remaining 12.92-acre open space that would remain its existing conditions.

3.6 INTENDED USES OF THE EIR

This DEIR is a project DEIR that examines the environmental impacts of the proposed project. This DEIR also addresses various actions that would be required by the City and others should an environmental determination be adopted, and the proposed project be approved. It is the intent of this DEIR to evaluate the environmental impacts of the proposed project, thereby enabling the City of Torrance, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are:

Lead Agency	Action
Torrance City Council	Consider Final EIR for certification and project approvals listed above.
Torrance Fire Department	Approve site plans for fire access roads, and building plans for emergency egress routes
Responsible Agencies	**Action**
Los Angeles Regional Water Quality Control Board	Approve Water Quality Management Plan
California Department of Toxic Substances Control	Approve Removal Action Work Plan, Letter of No Further Action
Federal Emergency Management Agency	Approve Letter of Map Revision
South Coast Air Quality Management District	Air quality permits for construction and operation

3. Project Description

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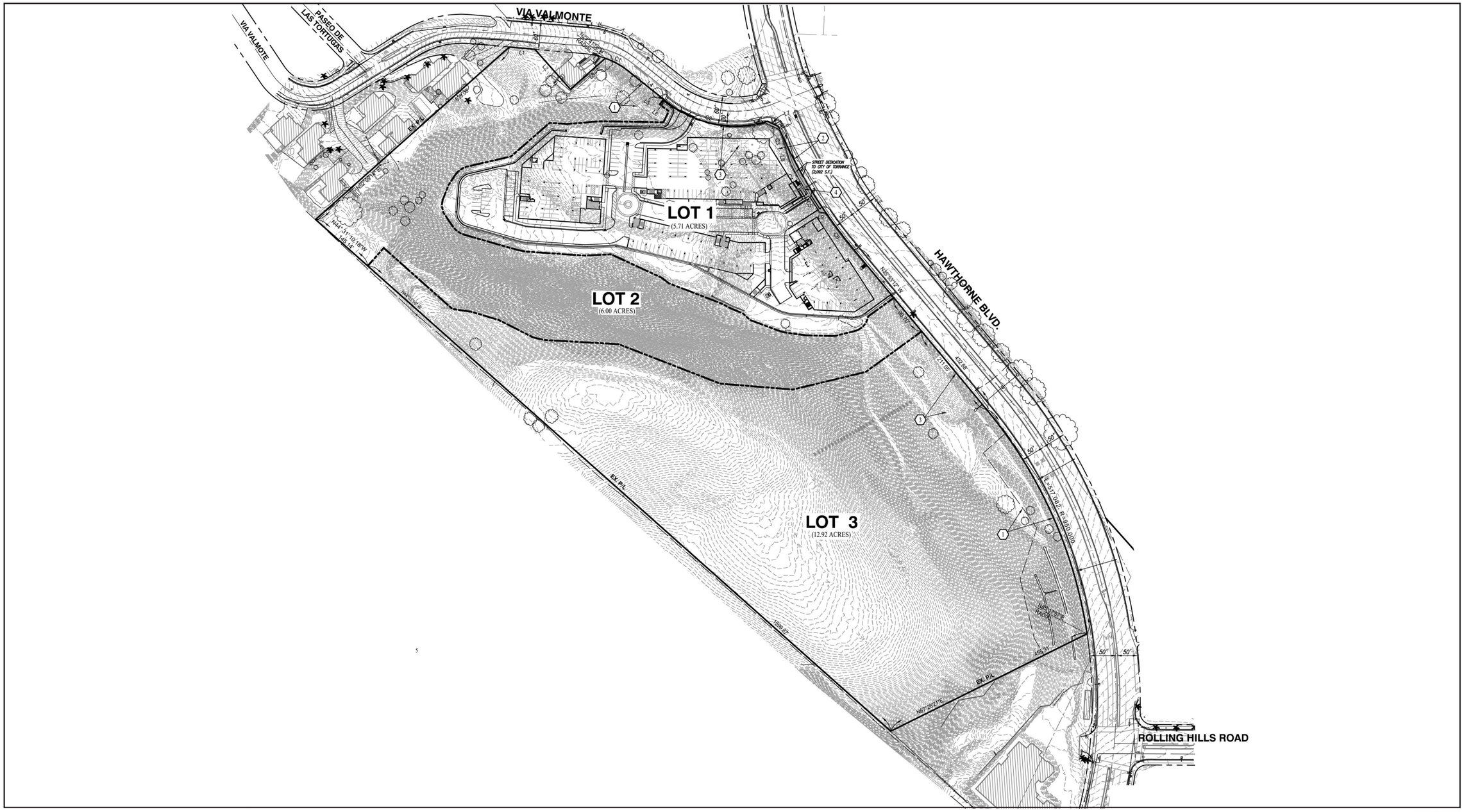
Figure 3-5 - Tentative Tract Map
3. Project Description



Source: KHR Associates, 2017

3. Project Description

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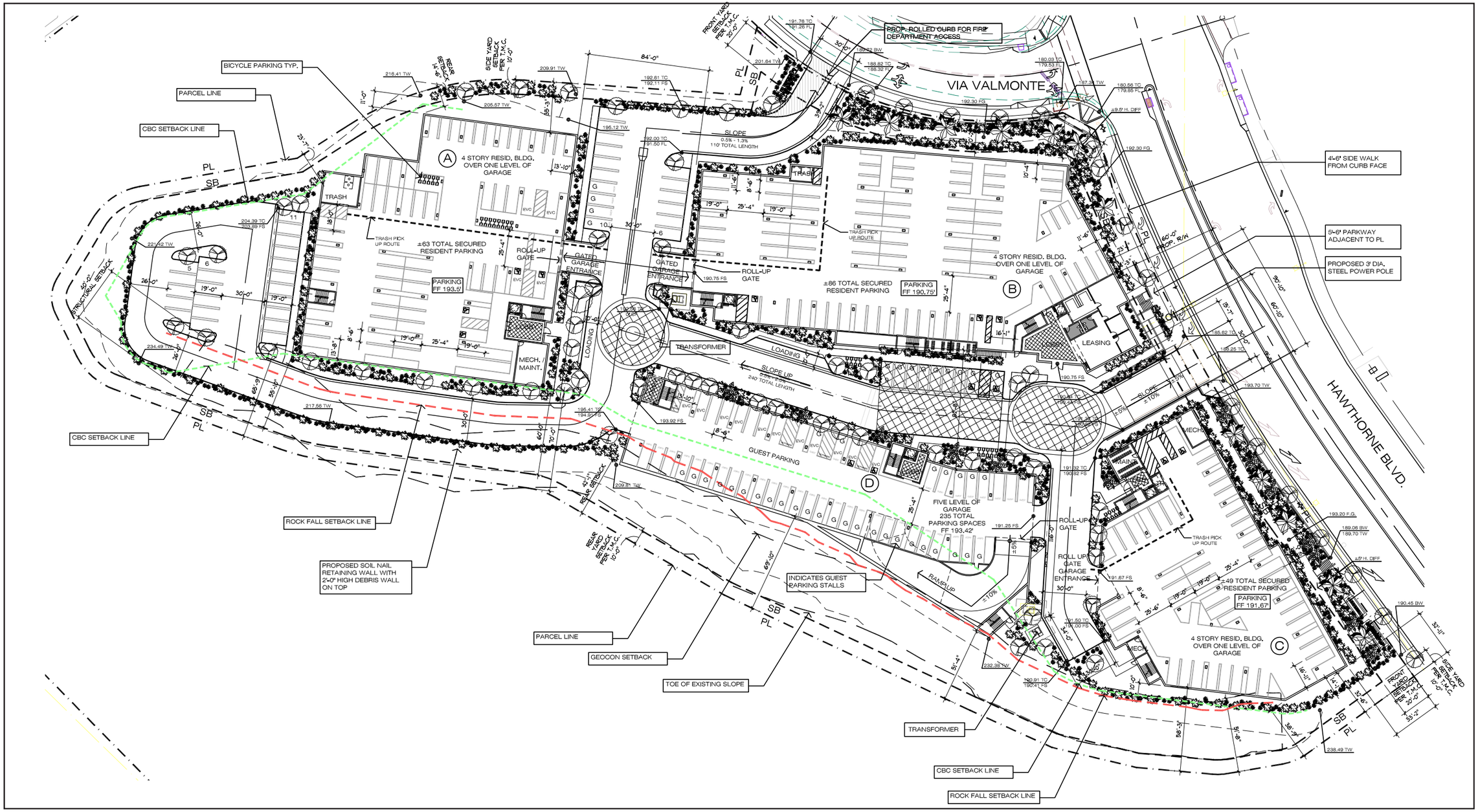
Figure 3-6 - Site Plan
3. Project Description



Source: Withee Malcolm Architects, 2018

3. Project Description

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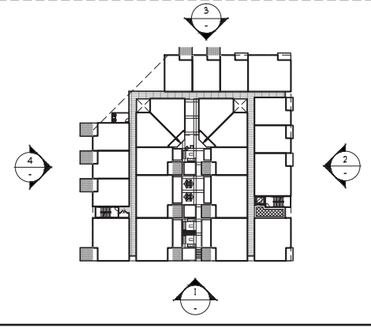
Figure 3-7a - Building A Elevations

3. WEST ELEVATION

2. EAST ELEVATION

4. NORTH ELEVATION

1. SOUTH ELEVATION



0 40
Scale (Feet)

Source: Withee Malcolm Architects, 2017

3. Project Description

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Figure 3-7b - Building B Elevations

Source: Withee Malcolm Architects, 2017

3. Project Description

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Figure 3-7c - Building C Elevations
3. Project Description

0 40
Scale (Feet)

Source: Withee Malcolm Architects, 2017

3. Project Description

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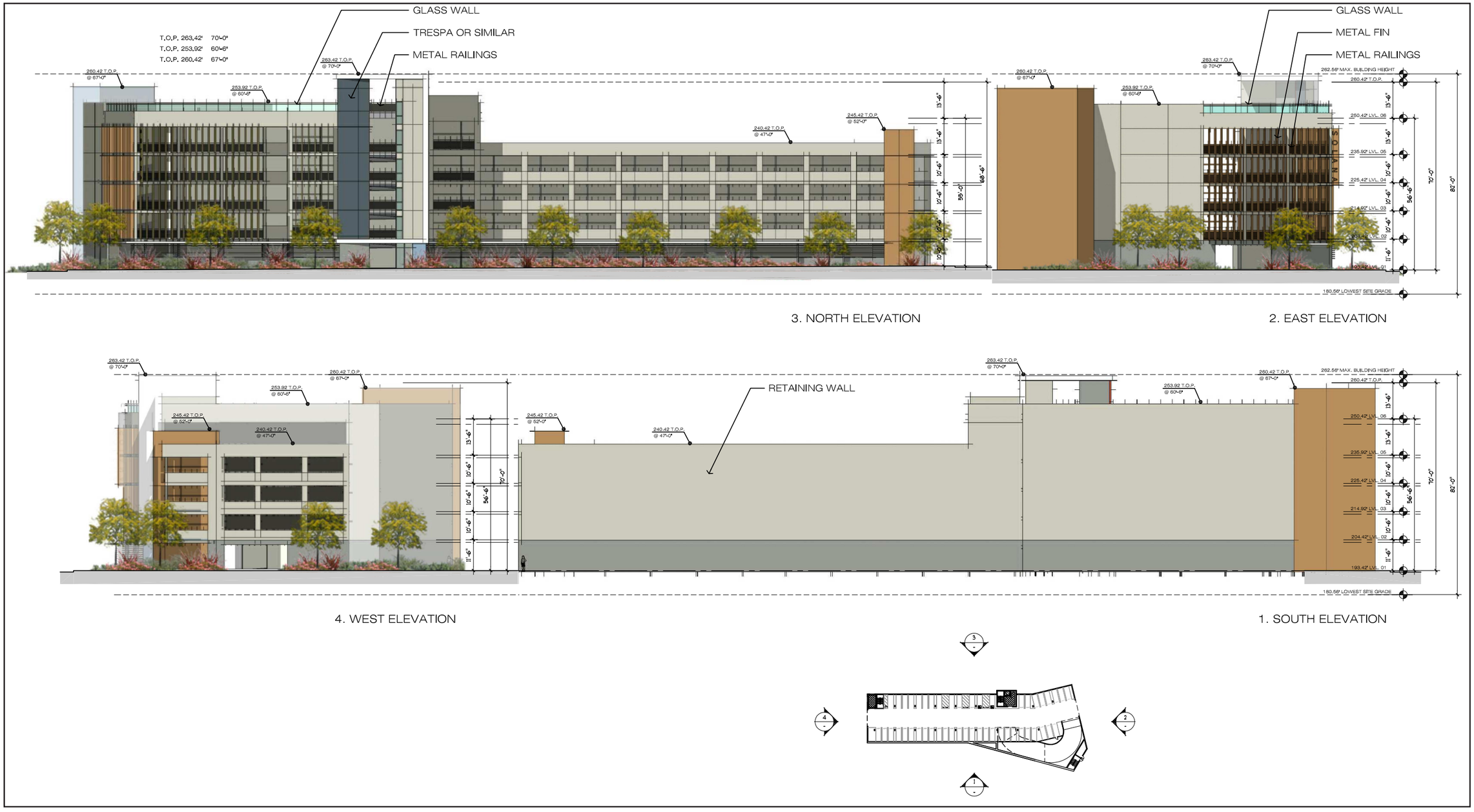
Figure 3-8 - Parking Structure [Building D] Elevations



0 40
Scale (Feet)

Source: Withee Malcolm Architects, 2018

3. Project Description

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Figure 3-9 - Open Space Plan
3. Project Description

Source: Withee Malcolm Architects, 2018

3. Project Description

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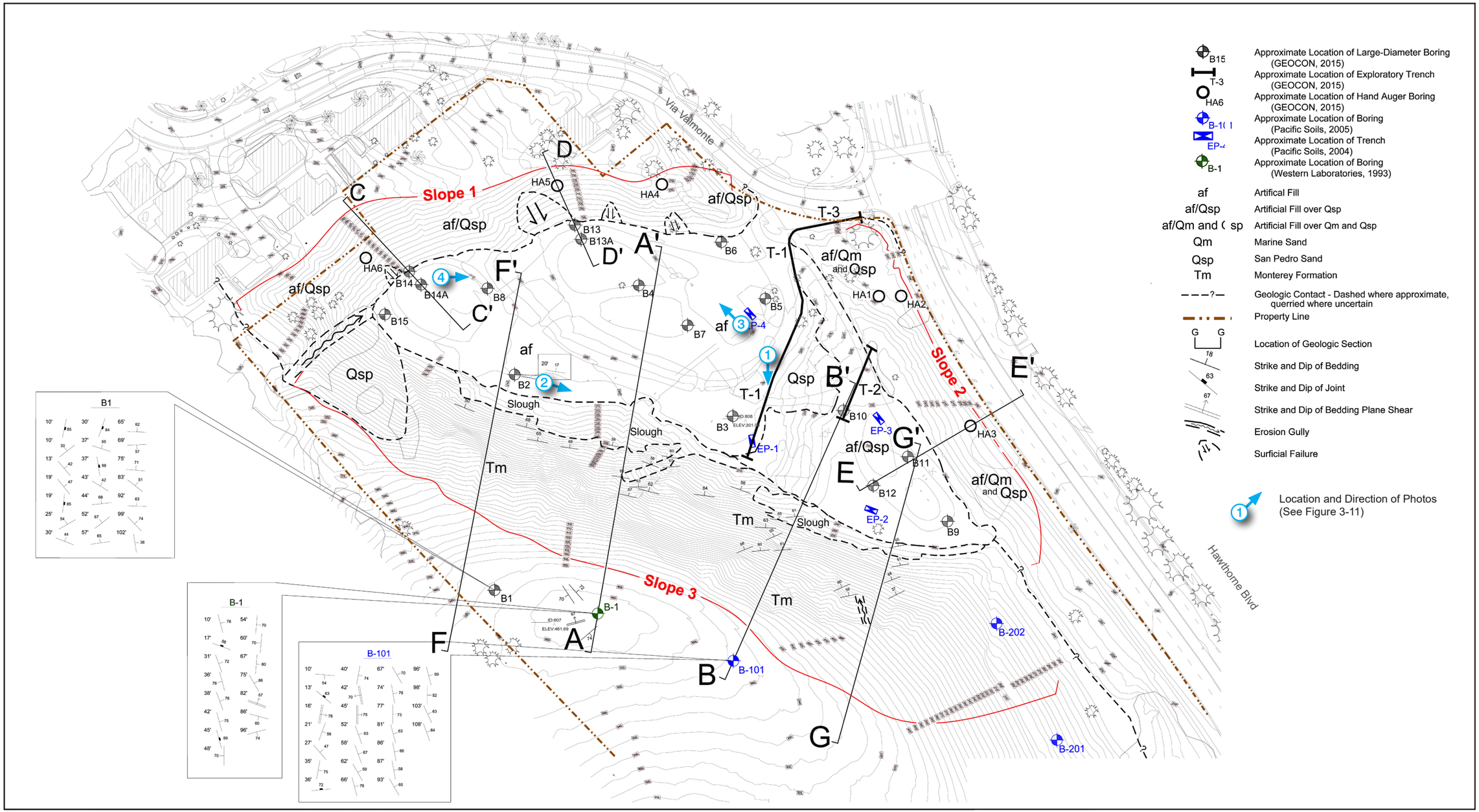
Figure 3-10 - Slopes Map
3. Project Description



Note: Unincorporated county areas are shown in white.

Source: Geocon West, Inc., 2016

0 130
Scale (Feet)

3. Project Description

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Figure 3-11 - Slopes Photographs
4. Environmental Setting

1 Frontal view of the southeast part of Slope 3 looking southwest from the central part of the development area.

2 Side view of Slope 3 looking southeast from the northwest part of the development area.

3 Frontal view of Slope 2 looking northwest from the central part of the development area.

4 Side view of Slope 2 looking southeast from the northwest part of the development area.

Note: See Figure 5 “Slopes Map” for photo location and direction.

3. Project Description

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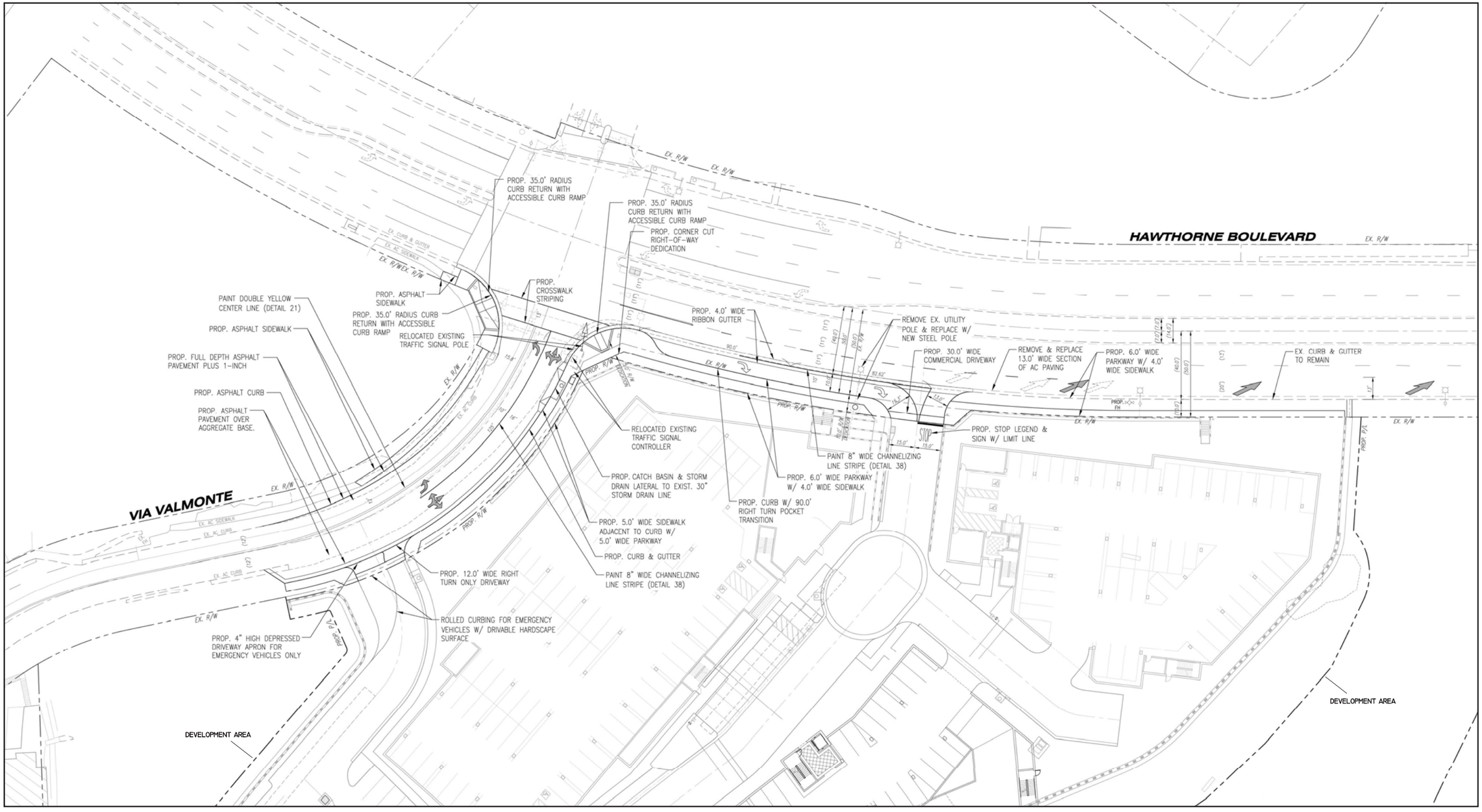
Figure 3-12 - Proposed Roadway Improvements
3. Project Description



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Scale (Feet)

Source: KHR, 2018

3. Project Description

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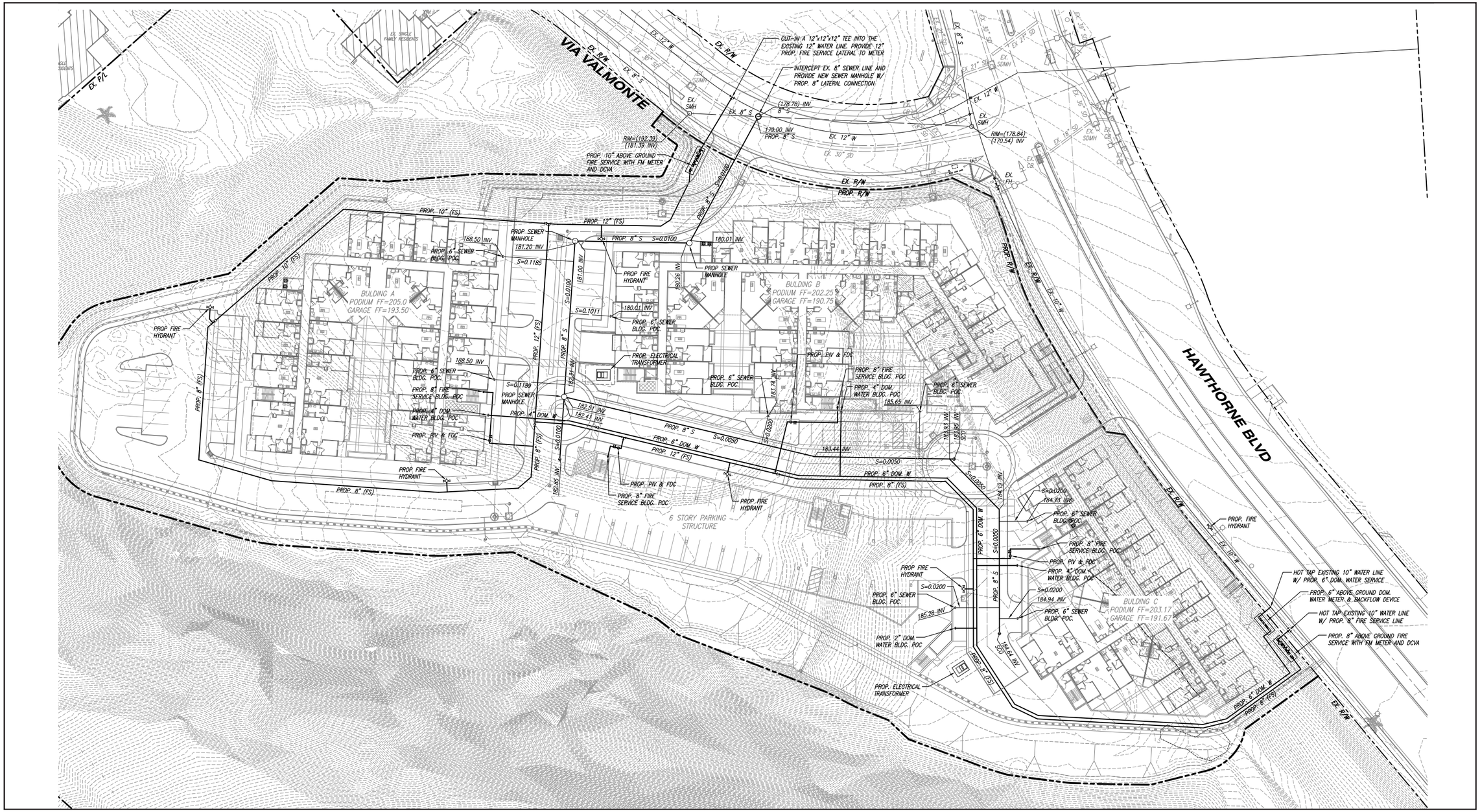
Figure 3-13 - Utilities Plan
3. Project Description



0 75
Scale (Feet)

Source: Withee Malcolm Architects, 2017

3. Project Description

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3. Project Description

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4. Environmental Setting

4.1 INTRODUCTION

This section provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (Guidelines § 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

The City of Torrance in the County of Los Angeles is in the Los Angeles Basin, a coastal plain at the north end of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges Geomorphic Province is characterized by mountain ranges separated by northwest-trending valleys and extends from southwestern California south into Mexico. The Los Angeles Basin is bounded by the Santa Monica Mountains and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Pacific Ocean to the south and west. The Santa Monica Mountains and San Gabriel Mountains are part of the Transverse Ranges Geomorphic Province, an east-west-trending series of steep mountain ranges and valleys extending from Santa Barbara County in the west to central Riverside County in the east.

As shown in Figure 3-1, *Regional Location, Local Vicinity, and Aerial Photograph*, the City of Torrance is in the southeastern portion of Los Angeles County, referred to as the South Bay, a highly urbanized region. Neighboring communities include Rolling Hills Estates and Palos Verdes Estates to the south, Redondo Beach to the west, Gardena and Lawndale to the north, and Carson to the east. The Pacific Ocean forms the western border of a small portion of southwest Torrance. Interstate 405 (I-405, or San Diego Freeway) transects the northern portion of the City, and provides regional circulation to and through the City.

4.2.2 Regional Planning Considerations

SCAG Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and provides a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional

clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted in April 2016 (SCAG 2016). Major themes in the 2016 RTP/SCS include integrating strategies for land use and transportation; striving for sustainability; protecting and preserving existing transportation infrastructure; increasing capacity through improved systems managements; providing more transportation choices; leveraging technology; responding to demographic and housing market changes; supporting commerce, economic growth, and opportunity; promoting the links between public health, environmental protection, and economic opportunity; and incorporating the principles of social equity and environmental justice.

The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas (GHG) emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets identified by the California Air Resources Board. The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives to governments and developers for consistency. The proposed project's consistency with the applicable 2016-2040 RTP/SCS policies is analyzed in detail in Section 5.6, *Greenhouse Gas Emissions.*

South Coast Air Basin Air Quality Management Plan

The City of Torrance is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD). Pollutants emitted into the ambient air by stationary and mobile sources that are regulated by federal and state law and standards are detailed in the SoCAB Air Quality Management Plan (AQMP). Air pollutants for which ambient air quality standards (AAQS) have been developed are known as criteria air pollutants—ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants, such as O_3, through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants depending on whether they meet AAQS for that pollutant. Based on the SoCAB AQMP, the SoCAB is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS. The proposed project's consistency with the applicable AAQS is discussed in Section 5.2, *Air Quality*.

Greenhouse Gas Emissions Reduction Legislation

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05; Executive Order B-30-15; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); and Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act.

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the State of California:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 was passed by the state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the emissions reduction targets established in Executive Order S-3-05. Executive Order B-30-15 also established an interim goal of a 40 percent reduction below 1990 levels by 2030.

In 2008, SB 375 was adopted to connect GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

The project's ability to meet these regional GHG emissions reduction target goals is analyzed in Section 5.6, *Greenhouse Gas Emissions*.

South Bay Cities Council of Governments

The South Bay Cities Council of Governments (SBCCOG) is a joint powers authority of 16 cities and the County of Los Angeles that share the goal of maximizing the quality of life and productivity of the South Bay area. The SBCCOG has been working on climate action planning since 2008, employing a subregional approach to the management and coordination of climate action planning to assist its cities in complying with legislation such as AB 32 and SB 375. The SBCCOG completed the South Bay Sustainable Strategy to address land use and mobility in an area that is transit poor. While the SBCCOG does not intend to produce an SCS, it hopes to use its South Bay Sustainable Strategy as a guide to develop a scenario-planning model that will allow the SBCCOG to independently plan and evaluate its member cities' development scenarios. This approach will supplement the regional SCS with a concrete tool to demonstrate a strategy that best fits the conditions in the South Bay to SCAG, the Los Angeles County Metropolitan Transportation Authority, and the South Bay cities' planning staffs.

The SBCCOG is committed to providing a more livable, equitable, and economically vibrant sub-region. As a part of these efforts, the SBCCOG has developed Climate Action Plans (CAP) to provide policy guidance and sustainability resources for the 15 South Bay cities in support of their efforts to reduce GHG emissions. The City of Torrance CAP was issued in December 2017. The City's CAP serves as a guide for action by setting GHG emission reduction goals and establishing strategies and policies to achieve desired outcomes over the next 20 years. These strategies and policies would accomplish the City's reduction targets of 15% below 2005 levels by 2020 and 49% below 2005 levels by 2035.

The project's consistency to meet with the applicable CAP's strategies and policies is analyzed in Section 5.6, *Greenhouse Gas Emissions*.

Los Angeles Metropolitan Transit Authority

The Los Angeles Metropolitan Transit Authority (Metro) is Los Angeles County's designated congestion management agency. Metro is responsible for the conformance monitoring and updating of Los Angeles County's Congestion Management Program (CMP), a multimodal program. The proposed project's consistency with the CMP is provided in Section 5.12, *Transportation and Traffic*.

Congestion Management Program

The most recent CMP was issued by Metro in 2010. The goals of the CMP are to link local land use decisions with their impacts on regional transportation, and air quality; and to develop a partnership among transportation decision makers on devising appropriate transportation solutions that include all modes of travel. To meet these goals, the CMP provides:

- Tracking and analysis to determine how the regional highway and transit systems are performing.
- Local analysis of the impacts of local land use decisions on regional transportation.
- Local implementation of Transportation Demand Management (TDM) design guidelines that ensure new development includes improvements supportive of transit and TDM.
- Tracking new building activity throughout Los Angeles County. (Metro 2010)

4.3 LOCAL ENVIRONMENTAL SETTING

The project site is on the southern boundary of the City of Torrance at the northern foot of the Palos Verdes Hills in southwestern Los Angeles County. The nearest freeway to the site is Interstate 110 (I-110 or the Harbor Freeway) approximately 3.9 miles to the east via Pacific Coast Highway (State Route 1). The two nearest state highways to the project site are State Route 1 (SR-1), approximately 0.7 mile to the north; and SR-107, Hawthorne Boulevard, also approximately 0.7 mile to the north. Local access to the project site is provided by Hawthorne Boulevard, with secondary access from Via Valmonte. The north half of the southwest site boundary is bounded by the City of Palos Verdes Estates, and the south half by the City of Rolling Hills Estates.

The project site is 24.68 acres at the southwest corner of Hawthorne Boulevard and Via Valmonte. The site is private property, signed and fenced; there is no public access to the site. However, it should be noted that public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance. The project site includes Assessor's Parcel Numbers APNs 7547-001-018, 7547-001-019, 7547-001-020, 7547-001-021, 7547-002-011, 7547-001-007, 7547-001-008, 7547-001-009, 7547-001-024, 7547-001-025, 7547-001-026, 7547-002-005, 7547-002-006, 7547-002-007, 7547-002-008, 7547-002-009, 7547-002-010. The site is approximately 1,480 feet long northwest-southeast and approximately 860 feet east-west at its widest point.

4.3.1 Existing Land Use

The site is primarily vacant and consists partly of disturbed (bare) land; the balance of the site is vegetated with nonnative grassland, undisturbed and disturbed coastal sage scrub, chaparral, and mustard vegetation. A 200-

to 250-foot-high, north-facing former quarry slope extends diagonally across the site from the southeast corner of the site to the northwest corner; the slope continues northeast from near the northwest site boundary, diminishing in height, to near the northeast site boundary (see Figures 3-2, *Project Site Topographic Map;* 3-3, *Site Photographs, Development Area;* and 3-4, *Site Photographs, Proposed Open Space Area*).

Topography

The site is at the foot of the north-facing slopes of the Palos Verdes Hills. The southwest part of the site ranges in elevation from approximately 460 feet above mean sea level (amsl) down to approximately 330 feet amsl at the southeast corner of the site. A steep slope remaining from the mining operations, up to 250 feet high, extends across the site generally east-west from the southeast corner of the site to the northwest corner. The depth of soil disturbance within the mining site ranges from 75 to 311 feet. The approximately 5.71-acre development area, mostly in the northeast quadrant of the site, consists of two pads—one approximately 190 to 220 feet amsl and the other approximately 235 to 245 feet amsl. The southeast quadrant of the site gradually slopes eastward toward Hawthorne Boulevard. The northernmost part of the site slopes upward toward single-family homes off-site and south of Via Valmonte; that slope is also a mining remnant. Elevations on the northwest site boundary range up to approximately 340 feet amsl (see Figure 3-2, *Project Site Topographic Map*).

The geotechnical investigation report designates three slopes above the development area:

- **Slope 1,** above the north side of the development area, adjacent to Via Valmonte, ranges from 40 to 80 feet high with grades of 1.25:1 to 1.5:1 (horizontal:vertical).
- **Slope 2,** above the northeast side of the development area, adjacent Hawthorne Boulevard, is approximately 50 feet in height with grades of 2:1 to 1.25:1 (horizontal: vertical).
- **Slope 3,** above the south and southwest sides of the development area, ranges from 200 to 250 feet high. The face of slope 3 has been graded to a uniform grade between approximately 0.84:1 to 0.9:1 (horizontal:vertical) (see Figures 3-10, *Slopes Map,* and 3-6*, Slopes Photographs*).[1]

The proposed residential development would be built adjacent to Slope 1 and Slope 3, and Slope 2 would be removed during project development.

4.3.2 Scenic Features

The project site is in an urbanized setting at the northern foot of the Palos Verdes Hills and the southern edge of the Los Angeles Basin. The Palos Verdes Hills are characterized as a mix of urbanized areas, including some estate-density residential development, interspersed with open space areas. Visual resources on-site consist of shrubs.

Views from the development area are narrowly constrained by the three slopes rising from the development area. The upland part of the site affords expansive views across much of the Los Angeles Basin to the north

[1] The above-described horizontal: vertical grade is calculated from the grade of 48 to 50 degrees reported in the geotechnical investigation report.

and east and parts of the Palos Verdes Hills to the south and west. The San Gabriel Mountains are visible to the north, the Santa Monica Mountains to the northwest, and the Santa Ana Mountains to the east. Details related to impacts on the project site's scenic features and visual character are provided in Section 5.1, *Aesthetics*.

4.3.3 Climate and Air Quality

As noted above, the City of Torrance is in the SoCAB, which is managed by SCAQMD. The SoCAB is designated nonattainment for ozone (O_3), fine inhalable particulate matter ($PM_{2.5}$), and lead (Los Angeles County only) under the California and National AAQS and nonattainment for coarse inhalable particulate matter (PM_{10}) and nitrogen dioxide (NO_2) under the California AAQS. Additional information regarding air quality and climate change regulation affecting the City of Torrance is provided in Section 4.2.2, *Regional Planning Considerations*, above. Existing air quality conditions in the City are also provided in Sections 5.2, *Air Quality*, and 5.6, *Greenhouse Gas Emissions*.

4.3.4 Biological Resources

A biological resources technical report was prepared for the project site which identified vegetation communities, wildlife, and other sensitive resources onsite within the project site and a 500-foot buffer around the site. Refer to Section 5.3, *Biological Resources*, for additional information concerning biological resources and an analysis of impacts on such resources.

4.3.5 Geology and Landform

The majority of the project site is in a zone of required investigation for earthquake-induced landslides mapped by the California Geological Survey (Geocon West 2017). The geotechnical investigation report included an analysis of the stability of two of the three slopes above the development area.[2] The analysis concluded that both slopes analyzed are subject to surface instability, including rockfall (Geocon West 2017). The geotechnical investigation report includes recommendations for slope construction, retaining-wall design, and rockfall protection. Refer to Section 5.5, *Geology and Soils*, for additional information concerning geological and soil conditions and an analysis of the proposed project's impacts on geology and soils.

4.3.6 Hydrology

The project site is in the Dominguez Watershed, which spans about 133 square miles in southwest Los Angeles County, extending from the northern slopes of the Palos Verdes Hills north to the City of Inglewood. The major stream in the watershed is the Dominguez Channel, an engineered channel extending about 16 miles from the City of Hawthorne on the north to Los Angeles Harbor on the south (LACDPW 2004). Approximately 1.2 acres onsite near the northwest boundary—and partly in the proposed development area—are in a 100-year flood zone (flood zone A) mapped by the Federal Emergency Management Agency (FEMA 2018). The rest of the project site is within Zone X, which is outside of 100-year and 500-year flood zones. According to the applicant, a Letter of Map Revision (LOMR) will be submitted to FEMA to remove the area from Zone A. If approved, the entire site will be within Zone X. Refer to Section 5.8, *Hydrology and Water*

[2] The third slope was not analyzed because the proposed project would remove it during site grading.

Quality, for additional information regarding hydrological conditions and an analysis of project impacts on hydrology and water quality.

4.3.7 Noise

A sound-level survey was conducted on May 11, 2016, to evaluate existing sound levels and assess potential project noise impacts on the surrounding area. Noise measurements were conducted using a Piccolo Integrating Sound Level Meter equipped with a 0.5-inch, prepolarized condenser microphone with preamplifier. The sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 (General Use) sound level meter. The calibration of the sound level meter was verified before and after the measurements, and the measurements were conducted with the measurement microphone covered with a windscreen and positioned approximately five feet above the ground.

Four noise measurement locations were selected (ST1 through ST4), representing existing and/or future noise-sensitive receptors on the project site and in the project vicinity. Noise measurement data is also included in Appendix H. Ambient noise levels ranged from approximately 58 dBA Leq at ST1 (southeast side of proposed project site) to 64 dBA Leq at ST2 (northeast side of proposed project). The primary noise source at the sites was traffic along the adjacent roadways. Secondary noise sources included aircraft, birds, rustling leaves, and distant landscaping activities.

Refer to Section 5.10, *Noise*, for additional information concerning the noise environment and an analysis of project-related noise impacts.

4.3.8 Public Services and Utilities

Fire protection and emergency medical services in the City of Torrance are provided by the Torrance Fire Department (TFD) from six fire stations and one Fire Prevention and Hazardous Administration office. The two closest TFD fire stations to the project site are Station 2 at 25135 Robinson Way, approximately 0.7 mile east of the site, and Station 4, at 5205 Calle Mayor, approximately 1.4 miles to the northwest. Law enforcement services in the City of Torrance are provided by the Torrance Police Department (TPD). TPD is at 3300 Civic Center Drive. The project site is served by the Torrance Unified School District (TUSD). The proposed project site is within the attendance boundaries for Riviera Elementary School, Richardson Middle School, and South High School. The City of Torrance Library Services Division provides library services to the City. The nearest City library to the project site is the Walteria Library at 3815 W 242nd Street, approximately 0.5 mile to the north.

The Sanitation Districts of Los Angeles County (LACSD) provide wastewater treatment for the project site at the Joint Water Pollution Control Plant (JWPCP) in the City of Carson. Torrance Water Services (TWS) would supply water to the project. Private haulers licensed to do business in the City of Torrance collect solid waste from commercial uses and multifamily residences in Torrance. The City of Torrance Sanitation Division collects solid waste from single-family residences in Torrance.

Refer to Sections 5.11, *Public Services*, and 5.14, *Utilities and Service Systems*, for additional information regarding public services and utilities and service systems, respectively, and an analysis of project impacts on services and utilities.

4.3.9 General Plan and Zoning

The existing City of Torrance General Plan land use designation is R-LO, Low-Density Residential, and the existing zoning designation is A-1, Light Agricultural District (Hillside Overlay District) (Torrance 2010; 2015). A-1 Zoning District permits the growing of orchards, berries, and bush crops and single-family homes at densities no greater than 9.0 units per net acre.

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts as "...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency.

B. A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.

In general, the potential for cumulative impacts is contiguous with the City boundary, since the City is the service provider for various City services and public utilities; however, as the proposed project is located along southwestern boundary of the City and adjacent to the cities of Rancho Palos Verdes, Rolling Hills Estates, Lomita, and Redondo Beach. The proposed project's cumulative impacts will analyze all of the above listed cities. The Land Use Element and associated land use districts detailed in the Torrance General Plan designate the general distribution and location of land to be used for residential, commercial, industry, institutional, open space/parks, and other land use types. The City's General Plan guides future development and growth in a way that promotes the health, safety, and welfare of the community. To regulate the amount of building intensity, the Torrance General Plan also includes development standards (e.g., maximum densities for each residential land use designation) that define the amount and type of physical development allowed in each land use category. This geographic planning framework is used in both the General Plan and the City's Zoning Regulations (Title 20 of the City's Municipal Code).

Cumulative analysis of transportation impacts is based partly on a list of related projects provided by five cities in the region—Torrance, Rancho Palos Verdes, Rolling Hills Estates, Lomita, and Redondo Beach—shown below in Table 4-1.

Table 4-1 Related Projects

Address and City	Land Use	Size and Units
3210 Sepulveda Boulevard, Torrance	Assisted Living	130 beds
Near 3405 West Carson Street, Torrance	Independent Living/Assisted Living/Hotel	360 units
21515 Hawthorne Boulevard, Torrance	Commercial (Health Club & Gym/Restaurant)	45,000 SF/ 12,000 SF
23104 Hawthorne Boulevard, Torrance	Day Care	10,023 SF
23550 Hawthorne Boulevard, Torrance	Restaurant/ Bank	1,500 SF/ 2,000 SF
24000 Garnier Street, Torrance	Medical Office	36,866 SF
2640 Lomita Boulevard, Torrance	Commercial (Costco w/ Car Wash/Gas Replacing Prev. Costco) + Medical Off.	13,500 SF net (Costco) + 75,000 SF medical office
24444 Hawthorne Boulevard, Torrance	Office/Residential	2,700 SF/ 8 DU
5601 Crestridge Road, Rancho Palos Verdes	Senior Condominiums	60 DU
927 Deep Valley Drive, Rolling Hills Estates	Condominiums/ Commercial (Replace Medical, Office, Retail Use)	75 DU 2,000 SF
Near 67 Peninsula Center, Rolling Hills Estates	Commercial	16,000 SF
627 Deep Valley Drive, Rolling Hills Estates	Condominiums/ Commercial	58 DU 5,810 SF
250th & Narbonne, Lomita	Condominiums/ Commercial/ Industrial	20 DU 2,035 SF 4,281 SF
24516 Narbonne Avenue, Lomita	Townhomes/ Retail	22 DU 3,700 SF
25114 Narbonne Avenue, Lomita	Townhomes/ Retail	11 DU 3,500 SF
1730-1734 Pacific Coast Highway, Lomita –	Commercial/ Retail	850 SF 180 SF
Mixed-Use Development, Torrance –	Mixed-Use	11 DU 2,525 SF
337-341 Calle Miramar Redondo Beach	Mixed-Use	52 DU 10,108 SF
1700 S Pacific Coast Highway, Redondo Beach	Mixed-Use	Not available

Source: KHR 2019.

However, several of the environmental topic areas consider a larger area to determine cumulative impacts, such as air quality, biological resources, greenhouse gas emissions, hydrology and water quality, noise, and transportation/traffic. The cumulative study area, methodology, and impacts for each environmental impact category are described in detail in Chapter 5, Environmental Analysis, of this DEIR

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5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes the proposed project's effects and the significance of its impacts, and recommends mitigation measures to reduce or avoid impacts. This chapter has a separate section for each environmental issue area that was determined to need further study in the EIR. (see Appendix A). Environmental issues and their corresponding sections are:

- 5.1 Aesthetics
- 5.2 Air Quality
- 5.3 Biological Resources
- 5.4 Cultural Resources
- 5.5 Geology and Soils
- 5.6 Greenhouse Gas Emissions
- 5.7 Hazards, including Wildfires, and Hazardous Materials
- 5.8 Hydrology and Water Quality
- 5.9 Land Use and Planning
- 5.10 Noise
- 5.11 Public Services
- 5.12 Transportation and Traffic
- 5.13 Tribal Cultural Resources
- 5.14 Utilities and Services Systems, including Energy Usage

Sections 5.1 through 5.14 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed.

The initial study also determined that certain issues under an environmental topic would not be significantly affected by implementation of the project; these issues are not discussed further in this DEIR.

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, each section is organized under the following headings:

- Environmental Setting
- Thresholds of Significance
- Environmental Impacts
- Cumulative Impacts

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- Existing Regulations and Standard Conditions
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

Terminology Used in This DEIR

The level of significance is identified for each impact in this DEIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with CEQA and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment and reduce identified impacts to less than significant levels.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

5.1 AESTHETICS

This section of the DEIR discusses the potential impacts to the visual character of the project site and its surroundings that would occur following implementation of the proposed Solana Residential Development Project (proposed project). The analysis in this section is based in part on analyses of photographs, site reconnaissance, and proposed project data. In addition, the applicant has prepared visual simulations depicting the proposed line of sight from the backyards of the four homes located along Via Valmonte.[1]

Thirty-five comments relating to aesthetics and visual resources were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential impacts that the scale of the proposed project and new lighting sources would have on the visual character of the community (see Appendix A). The potential impacts of the development and its new sources of lighting on visual resources have been analyzed in this section.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY SETTING

State and local laws, regulations, plans, or guidelines that are applicable to the proposed project are summarized below. There are no federal laws applicable to the proposed project.

State

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the California Energy Commission adopted the 2013 Building Energy Efficiency Standards, which went into effect on July 1, 2014. Title 24 requires outdoor lighting controls to reduce energy usage; in effect, this reduces outdoor lighting.

Local

City of Torrance General Plan

The existing City of Torrance General Plan land use designation is R-LO, Low-Density Residential, and the existing zoning designation is A-1, Light Agricultural District (Hillside Overlay District). A-1 Zoning District

[1]The applicant requested permission from the identified home owners to enter the property and take photographs from their property; however, permission was not granted. Therefore, these visual simulations are representative of the proposed views from the affected homes and not based on actual photographs.

permits the growing of orchards, berries, and bush crops and single-family homes at densities no greater than 9.0 units per net acre.

Land use objectives and policy requirements outlined in the General Plan Community Resources and the Land Use Element pertaining to the proposed project's aesthetic impacts include the following:

Community Resource Element

- Continue to evaluate the environmental impact of public and private projects on properties that have significant open space value. (Policy CR.1.1)
- Require the provision of on-site open space in new developments. (Policy CR.1.2)
- Zone publicly and privately owned outdoor recreational open space in a manner that preserves such properties for open space use. (Policy CR.3.4)
- Require greater creativity and flexibility in the design of residential developments to encourage the provision of more usable on-site open space. (Policy CR.3.6)
- Require that developers and property owners improve their properties by providing landscaping and similar aesthetic treatments along roadways. (Policy CR.4.2)
- Make the preservation of scenic vistas an integral factor in land development decisions. (Policy CR.19.1)
- Establish regulations for private lighting that minimize or eliminate light pollution, light trespass, and glare (obtrusive light). (Policy CR.20.1)

Land Use Element

- Require that new development be visually and functionally compatible with existing residential neighborhoods and industrial and commercial areas. (Policy LU.2.1)
- Encourage the transition of incompatible, ineffective, and/or undesirable land uses to land uses that are compatible and consistent with the character of existing neighborhoods. (Policy LU.2.2)
- Require new development to be consistent in scale, mass and character with structures in the surrounding area. For distinct neighborhoods and districts, consider developing design guidelines that suit their unique characteristics. Create guidelines that offer a wide spectrum of choices and that respect the right to develop within the context of existing regulations. (Policy LU.3.1)
- Require that new residential development be visually and functionally consistent in scale, mass, and character with structures in the surrounding neighborhood. Encourage residential development that enhances the visual character, quality, and uniqueness of the City's neighborhoods and districts. (Policy LU.5.1)

- Encourage site and building design whereby individual projects on separate lots function as unified developments to promote aesthetic and functional cohesiveness, where applicable and within the context of applicable regulations. (Policy LU.11.6)

- Require that development along the City's boundaries emphasize the qualities and uniqueness of Torrance by using attractive and cohesive design elements and architectural themes. (Policy LU.11.9)

Municipal Code

Division 9, Land Use, Chapter 2, General Provisions, Section 92.30.5, Lighting

All lighting on the subject property shall be constructed in such a manner that glare shall be directed away from all surrounding residential land uses.

Division 9, Land Use, Chapter 1, Purpose: Districts Established, Article 41 - R-H Hillside and Local Coastal Overlay Zone

The area of project development is in a special overlay district in the City of Torrance designed to acknowledge the development difficulties due to the topography of the hillside area of the City. Development on a hillside is subject to special review criteria based on view, light, air, and privacy concerns. The provisions of Article 41, R-H Hillside and Local Coastal Overlay Zone apply to all properties within the overlay zone in addition to the requirements of the underlying zone, and permit issuance is dependent on meeting the requirements of Article 41.

Article 41 outlines the requirements of new construction in the overlay zone, including planning and design, permitted development, development standards, waivers, and exemptions. Development standards for slope control and safety, general welfare, aesthetic control, and to help stabilize land values and investments are included. Any development on a lot within the overlay zone shall be subject to approval of a precise plan by the Planning Commission unless a series of specific requirements are met to exempt the project. The sections listed below outline the specific requirements of project development to comply with the hillside overlay.

As it relates to visual quality, Section 91.41.6, Planning and Design, states that no construction of a building or structure shall be permitted unless the Planning Commission (or the City Council on appeal) shall find that the location and size of the building or structure have been planned and designed in such a manner as to comply with the following provisions:

a) The proposed development will not have an adverse impact upon the views, light, air and privacy of other properties in the vicinity.

b) The development has been located, planned and designed so as to cause the least intrusion on the views, light, air and privacy of other properties in the vicinity.

c) The design provides an orderly and attractive development in harmony with other properties in the vicinity.

5.1.1.2 VISUAL SETTING

Visual Character and Visual Resources

The project site is in an urbanized setting at the northern foot of the Palos Verdes Hills and the southern edge of the Los Angeles Basin. The Palos Verdes Hills are characterized as a mix of urbanized areas, including some estate-density residential development, interspersed with open space areas (see Figure 3-1, *Regional Location, Local Vicinity, and Aerial Photograph*).

The project site is located in the Hillside Overlay Zone, which includes areas south of the Pacific Coast Highway, west of Calle Mayor and Anza Avenue, south of Sepulveda Boulevard, and bounded by the City borders to the west. According to the City's general plan land use element, this area of the City is notable for its less urbanized character compared to the rest of the City due to the narrower, tree-lined winding streets, hillsides, and views. The area consists mostly of single-family homes, with the exception of a few areas adjacent to Pacific Coast Highway and Palos Verdes Boulevard. Key character-defining qualities according to residents are the scenic qualities and larger residential lots. The character of development is highly influenced by the Hillside Overlay Zone. Residents aim to preserve neighborhood character by ensuring that new homes are built to scale with the rest of the neighborhood.

The project sits at the base of the peninsula, at the edge of the low-lying boundary of the City of Torrance. The site is primarily vacant and consists partly of disturbed (bare) land; the balance of the site is vegetated with nonnative grassland, coastal sage scrub and disturbed coastal sage scrub, chaparral, and mustard vegetation. A 200- to 250-foot-high, north-facing former quarry slope extends diagonally across the site from the southeast corner to the northwest corner, then continues northeast from near the northwest site boundary, diminishing in height, to near the northeast site boundary (see Figure 3-2*, Project Site Topographic Map*). Figure 3-3*, Site Photographs, Development Area,* and Figure 3-4*, Site Photographs, Proposed Open Space Area,* show the development area and upper open space area, respectively.

Adjacent Land Uses

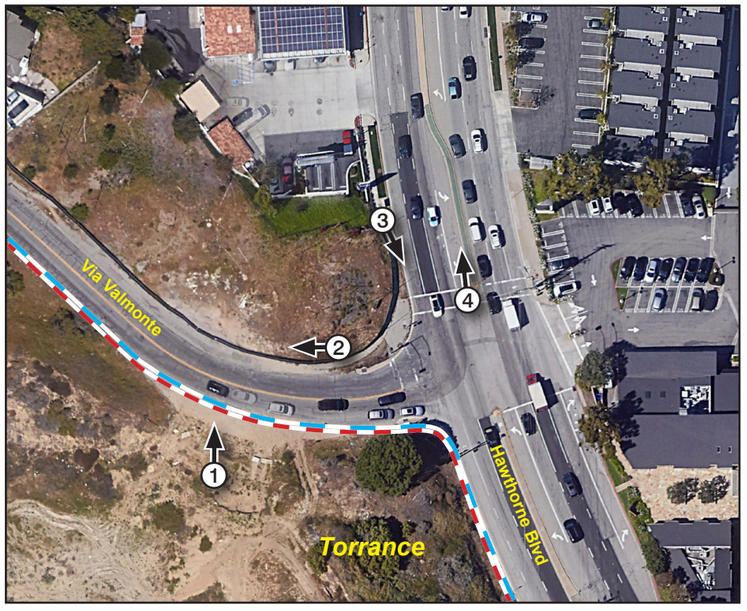
The project site is surrounded by single-family residences to the east and northeast across Hawthorne Boulevard and a senior living development next to the southeast site boundary. Across Hawthorne Boulevard east of the southeast corner of the site are multitenant commercial uses, including office buildings and the Hillside Village Shopping Center. These buildings are one- and two-story buildings, with the tallest buildings in the Hillside Village Shopping Center approximately 40 feet in height. Next to the southwest site boundary, from south to north, are Ernie Howlett Park (which includes a municipal maintenance yard) in the City of Rolling Hills Estates, City of Palos Verdes Estates City Parkland, and single-family residences in the City of Palos Verdes Estates. The northwest site boundary is surrounded by four single-family homes south of Via Valmonte and additional single-family homes north of Via Valmonte, all in the City of Torrance. These one- and two-story homes are approximately up to 27 feet in height from grade. Homes located to the north and west of the project site along local streets are below the grade of the uppermost point of Lot 3, and therefore have no views of the Lot 1 development area. Photographs of the immediate surrounding area are shown in Figure 5.1-1, *Project and Adjacent Site Photographs.*

Figure 5.1-1 - Project and Adjacent Site Photographs

① View looking north from the northeast part of the site to the northern site boundary and residences across Via Valmonte.

② View looking west to the project site from across Via Valmonte to the northeast.

Key Map



③ View looking southwest from the northeastern corner of Hawthorne and Via Valmonte, showing the 250-foot Slope 3 abutting the south side of the Development Area.

④ View looking north along Hawthorne northeast on the project site.

Key Map Source: Google Earth Pro, 2019

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Landform and Topography

The project site is at the northern foot of the Palos Verdes Hills, a small northwest-southeast-trending mountain range forming part of the southern margin of the Los Angeles Basin. The southwest part of the site ranges in elevation from approximately 460 feet above mean sea level (amsl) down to approximately 330 feet amsl at the southwest corner of the site. A steep slope remaining from former mining operations, up to 250 feet high, extends across the site generally east-west from the southeast corner of the site to the northwest corner. The approximately six-acre development area, mostly in the northeast quadrant of the site, consists of two pads—one approximately 190 to 220 feet amsl and the other approximately 235 to 245 feet amsl. The southeast quadrant of the site gradually slopes eastward toward Hawthorne Boulevard. The northernmost part of the site slopes upward toward single-family homes off-site south of Via Valmonte; that slope is also a mining remnant. Homes on this ridge move westward above the site and lie approximately 100 to 200 feet from the project site. Elevations on the northwest site boundary range up to approximately 340 feet amsl (see Figure 3-11, *Slopes Photographs*).

The geotechnical investigation report designates three slopes above the proposed development area:

- **Slope 1,** above the north side of the development area, adjacent Via Valmonte, ranges 40 to 80 feet high with grades of 1.25:1 to 1.5:1 (horizontal : vertical).
- **Slope 2,** above the northeast side of the development area, adjacent Hawthorne Boulevard, is approximately 50 feet high with grades 2:1 to 1.25:1 (horizontal : vertical).
- **Slope 3,** above the south and southwest sides of the development area, ranges from 200 to 250 feet high. The face of slope 3 has been graded to a uniform grade between approximately 0.84:1 to 0.9:1 (horizontal : vertical) (see Figures 3-10, *Slopes Map,* and 3-11*, Slopes Photographs*).[2]

The proposed residential development would be built adjacent to Slope 1 and Slope 3, and Slope 2 would be removed during project development (see Figure 3-5, *Tentative Tract Map*).

Scenic Vistas and Corridors

While the site is private property, public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance. As such, publicly available views from Slopes 1 and 3 allow for background views of parts of the Los Angeles Basin and the San Gabriel Mountains to the north and Santa Ana Mountains to the east. Private views from the four houses along Via Valmonte along Slope 1 have similar views of the Los Angeles Basin and the San Gabriel Mountains. No unique scenic vistas or corridors are listed in the City's general plan in proximity to the site; however, compliance with the Hillside Development Overlay takes into consideration scenic vistas and views in the area to preserve the nature of the community and surrounding environment. Broader views of the surrounding area as seen from the upper elevation of site and overlooking the development area are depicted in Figure 5.1-2, *Surrounding Area Photographs*.

[2] The above-described horizontal : vertical grade is calculated from the grade of 48 to 50 degrees reported in the geotechnical investigation report.

Development Area

Views from the development area to the south, north and east are constrained by the three slopes rising from the development area. Views from the development area are limited to the three slopes, which are partly vegetated and partly bare land; houses and trees atop Slope 1 above the north and northwest margins of the development area; a small area of vacant land opposite Via Valmonte to the north; and a small portion of the commercial land uses opposite Hawthorne Boulevard to the east.

Upland Part of Site

The upland part of the site affords expansive views across much of the Los Angeles Basin to the north and east; and parts of the Palos Verdes Hills to the south and west. The San Gabriel Mountains are visible to the north, the Santa Monica Mountains to the northwest, and the Santa Ana Mountains to the east.

Scenic vistas from hillsides in the City are protected by Hillside Overlay Zone policies requiring review of development proposals. The provisions of Article 41, R-H Hillside and Local Coastal Overlay Zone, apply to all properties within the overlay zone in addition to the requirements of the underlying zone, including the proposed project site.

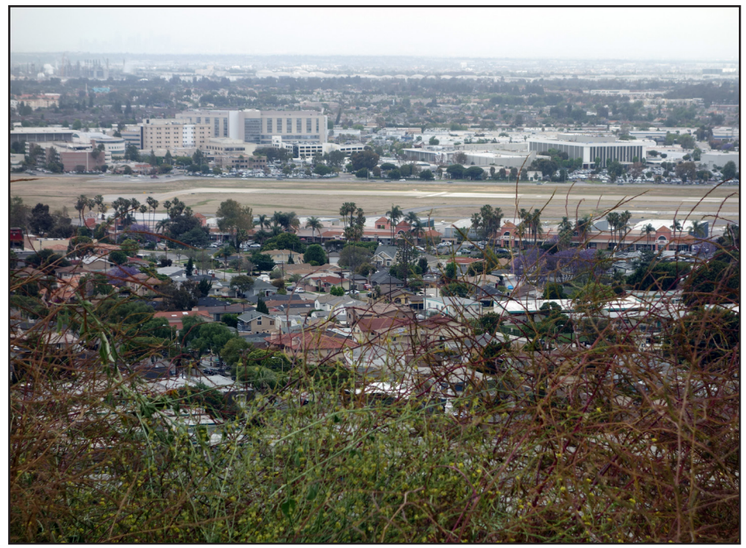
Light and Glare

There are no existing sources of light or glare onsite. Light sources next to the site consist of building lights on residences next to the north, northwest, and southwest site boundaries and building lights and parking lot lights on the assisted living facility next to the south site boundary. To the south and southwest at elevations far above the project site, residential lighting is the only source of light. In addition to residential lighting above the project site to the west and southwest, residential street lighting exists behind residences on Via Valmonte and fronting the project site to the north. Extensive street lighting also exists along Hawthorne Boulevard to the northwest of the project site in addition to commercial building and parking lot lighting across Hawthorne Boulevard.

Figure 5.1-2 - Surrounding Area Photographs
5. Environmental Analysis

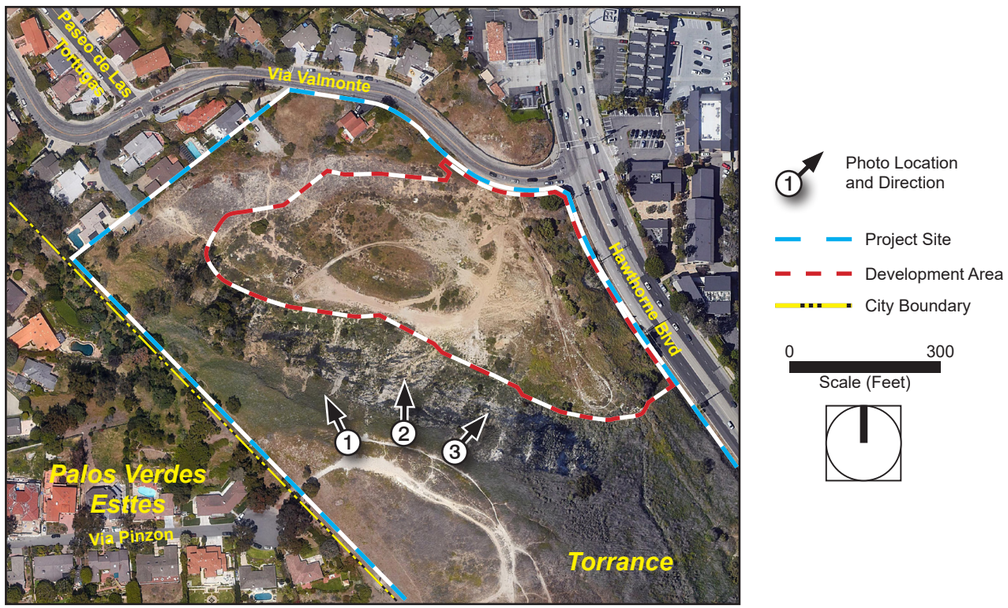
① View looking northwest from the upper elevation site area looking down on the west part of the Development Area and Slope 2 above it; Via Valmonte is in the right background.

② View looking north from the upper elevation site area towards Hawthorn Boulevard.



③ View looking northeast from the upper elevation site area with Zamperini Field Airport in the background.

Key Map



Key Map Source: Google Earth Pro, 2019

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5.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[3]

AE-1 Have a substantial adverse effect on a scenic vista.

AE-3 In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following threshold would be less than significant:

- Threshold AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

This impact will not be addressed in the following analysis.

5.1.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.1-1: The proposed project would not have a substantial adverse effect on a scenic vista. [Threshold AE-1]

The development area consists largely of disturbed land and nonnative grassland. The development area has a nondescript visual character—partly due to Slopes 1 and 3 to the south, west, and northwest of the development area, consisting of bare land, coastal sage scrub, and toyon chaparral vegetation, and partly due to disturbances within the development area such as unofficial bike trails. The slopes, remnants of past mining, have been graded since the mine closed, and do not have the visual quality of natural slopes. The proposed project would be developed within the City's Hillside Overlay District; therefore, the design of the proposed apartment buildings and parking structure would be required to provide an orderly and attractive development in harmony with other properties in the vicinity.

The 248 residential apartments would be developed in three 5-story buildings. The first level of each building would include ground level parking, with the exception of Building A, which would be semi-subterranean,

[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

ground floor lobbies, with four residential floors on the second through fifth floors. The units would be one- and two-bedroom units, with one-bedroom units ranging from 705 to 745 gross square feet each and two-bedroom units ranging from 1,110 to 1,200 gross square feet each. Units by size per building are listed in Table 3-1, *Proposed Apartment Units by Unit Size and Building*. Building A would be in the west part of the development area, Building B in the north-central part, and Building C in the southeast part (see Figure 3-6, *Site Plan*).

Building exteriors would consist of stucco and trespa, a laminate made of wood-based fiber and resin. All units would have balconies with metal railings. The residential buildings would each be 65 feet high from the ground-level finished floor to rooftop (see Figures 3-7A, *Building A Elevations,* 3-7B, *Building B Elevations* and 3-7C, *Building C Elevations.,* and Figure 3-8, *Parking Structure Building D Elevations).* The development area would have 96,385 square feet of landscaping, primarily along the perimeters of the site along Hawthorne Boulevard and Via Valmonte.

Although the project would result in new development on a currently vacant site, the new development would be surrounded by landscaping which would serve to enhance the existing visual character and reduce the apparent visual mass of the new residential development from surrounding areas along Hawthorne Boulevard. The architectural style of the project, both interior and exterior, would be a contemporary design. Maximum building elevations would be 65 feet for the residential units and 82 feet for the parking garage located adjacent the bluff face.

The hilltop in the southern part of the site (Slope 3) affords panoramic 360-degree views that include the San Gabriel and Santa Ana mountains, much of the Los Angeles Basin, and the Palos Verdes Hills to the south and Santa Monica Bay and part of the Pacific Ocean to the northwest. The hilltop is within the proposed habitat conservation area, and the project does not propose development that would alter publicly available views from the hilltop. The proposed project would be developed in the City's Hillside Overlay District, which was designed to acknowledge the development difficulties specific to the topography of the area. As discussed in Section 91.41.6, Planning and Design, of the City's Municipal Code, development in the hillside is subject to special review criteria based on view, light, air, and privacy concerns, and new development must be designed in a manner that will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity. An effect on a scenic vista is considered adverse when background scenery of an expansive viewshed is obstructed in a manner that deteriorates the nature of open scenery, blocking the horizon. The hillside overlay specifically outlines provisions requiring that the construction of a building or structure shall not be permitted unless the Planning Commission (or the City Council on appeal) finds that the location and size of the building or structure has been planned and designed to ensure that 1) the proposed development will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity; 2) the development has been located, planned, and designed to cause the least intrusion on the views, light, air, and privacy of other properties in the vicinity; and 3) that the design provides an orderly and attractive development in harmony with other properties in the vicinity. Development shall not be materially detrimental to the public welfare and to other properties in the vicinity, nor shall it cause or result in any adverse impacts on other properties in the vicinity.

While the Hillside Overlay District standards apply to the proposed project, CEQA requires the lead agency to look at the impact of the project on the environment, and not individual property owners or businesses.

Therefore, the analysis provided for the single-family homes along Via Valmonte is provided for informational purposes only. [4]

Because the development site is at the foot of a steep slope rising to the south and tapering to the west, project development would not be visible or adversely impact residences south of the site but would be visible in varying degrees from residences to the west. The four single-family homes adjacent to Slope 1 south of Via Valmonte have property lines situated between 100 and 360 feet from the new building development and are situated at elevations between 3 and 54 feet above the highest point of the new building elevation. A line-of-sight exhibit was prepared by KHR Associates to depict visual aesthetic impacts on neighboring properties. Figure 5.1-3a depicts a map of the residences at 24706, 24704, 24648, and 24660 Via Valmonte. Figure 5.1-3b depicts a map of residences at 4464 Via Pinzon. Figures 5.1-4 through 5.1-7, respectively, show those residences' property line maps (figures designated 'a'), line of sight visual simulations (figures designated 'b'), and elevation details (figures designated 'c') depicting the impact the proposed project would have on the views of the affected residences. Currently, the homes have a limited view of the project area in the foreground, which is obscured in part by existing vegetation. The large sloped area to the south is in plain view and would remain in view with implementation, with lower sloped elevations becoming hidden by building development. Project implementation would replace views of the low-lying area's bare land and immediate foreground surrounding area with the uppermost sections of new building developments. Surrounding area background views, such as those of the cliff face, would be largely unobstructed. Background views of parts of the Los Angeles Basin and the San Gabriel Mountains to the north and Santa Ana Mountains to the east would be minimally affected by the presence of project buildings that would be in the foreground of these scenic background views. . However, this minor obstruction would not interfere with views of the Los Angeles Basin or the mountain ranges, and other scenic resources available from public viewing areas. This is because the sloped terrain along Slope 1, and the distance of viewing areas from the proposed building allows for views well beyond the proposed building.

Homes located to the north and west of the project site along local streets are below the grade of the uppermost point of Lot 3, and therefore have no views of the Lot 1 development area. Lot 3 would be maintained in its current state, and views for these residential uses would remain the same as the existing condition. The undeveloped 12.92 acres of Lot 3 would remain in its current state and would remain available to public access, similar to existing conditions. As shown in Figure 3-4 - *Site Photographs, Hilltop, Proposed Open Space Area*, this area allows for expansive views of parts of the Los Angeles Basin and the San Gabriel Mountains to the north and Santa Ana Mountains to the east. The highest point of project development, Building D, would be located directly against the bluff face fronting the southeastern area of Lot 3, and thereby would not be visible to viewers. Portions of Building A may be visible from this location; however, the highest point of any residential

[4] A lead agency must make a finding of significance if a project's impacts may cause substantial adverse effects on human beings. Pub Res C §21083(b)(3); 14 Cal Code Regs §15065(a)(4). See *Joshua Tree Downtown Bus. Alliance v County of San Bernardino* (2016) 1 CA5th 677, 689 (referencing this requirement). Under this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people will be significantly affected. This factor relates to adverse changes to the environment of human beings generally, not to effects on particular individuals. See *Taxpayers for Accountable Sch. Bond Spending v San Diego Unified Sch. Dist.* (2013) 215 CA4th 1013, 1042; *Lucas Valley Homeowners Ass'n v County of Marin* (1991) 233 CA3d 130, 156; *Topanga Beach Renters Ass'n v Department of Gen. Servs.* (1976) 58 CA3d 188, 195. CEQA is generally concerned with effects on the environment, not with effects on particular persons or particular businesses. *Clews Land & Livestock v City of San Diego* (2017) 19 CA5th 161, 196; *Friends of Davis v City of Davis* (2000) 83 CA4th 1004, 1021.

building is 258.5 feet asml, and Lot 3 is approximately 460 amsl. Therefore, the views of the Los Angeles Basin and the mountain ranges would still be visible and mostly unobstructed to users of the Lot 3's open space.

Although foreground views would be altered by the proposed project, implementation of the proposed project would not significantly obstruct or otherwise degrade scenic vistas, that consist of views of scenic resources including the Los Angeles Basin and the mountain ranges from viewing areas in the project vicinity. Broad background views would remain unobstructed, and project development would not block or adversely impact a scenic vista. Impacts would be less than significant.

Figure 5.1-3a - Line of Sight
5. Environmental Analysis

Source: KHR Associates, 2019

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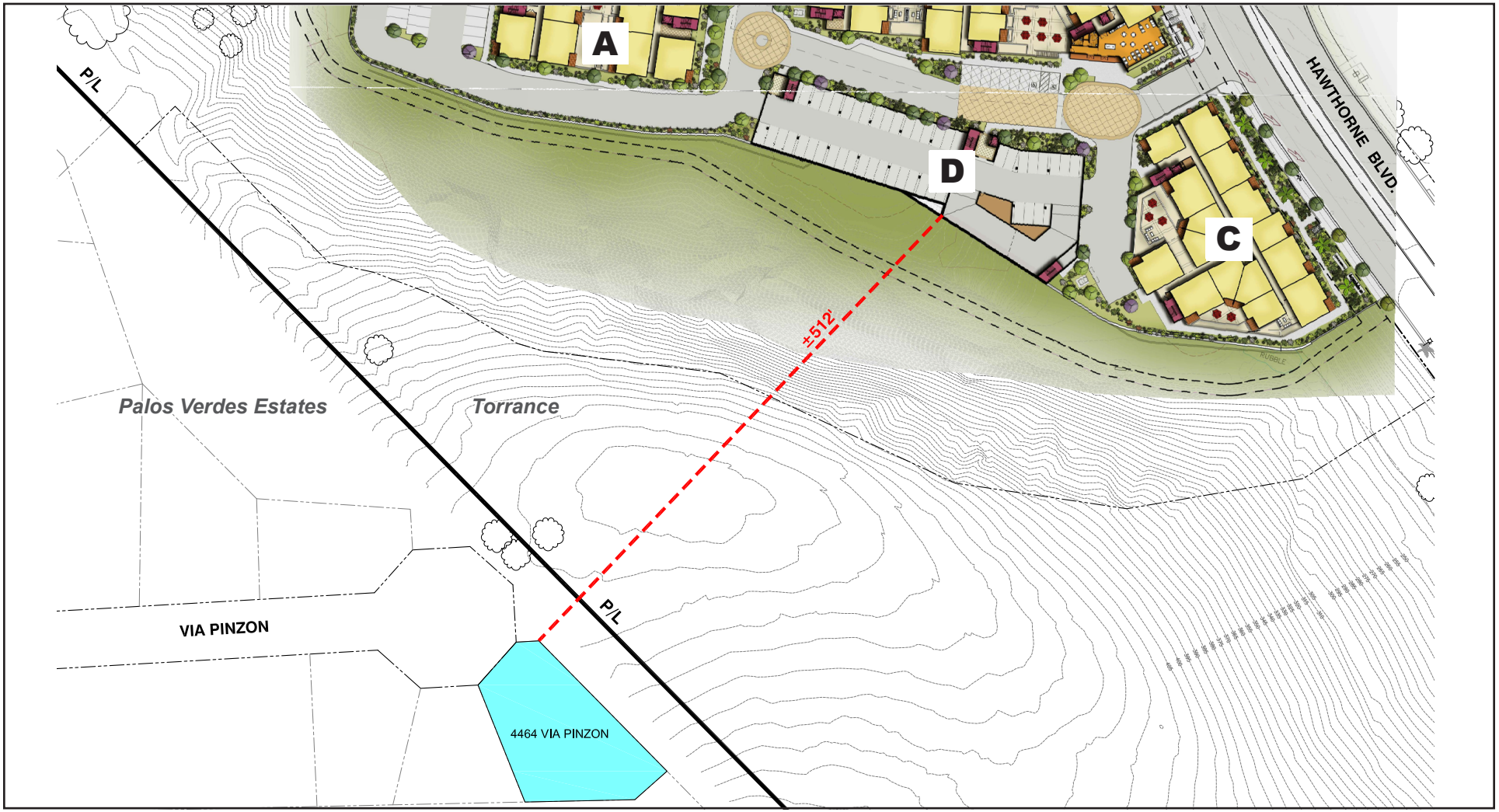
Figure 5.1-3b - 4464 Line of Sight
5. Environmental Analysis



Source: KHR Associates, 2019

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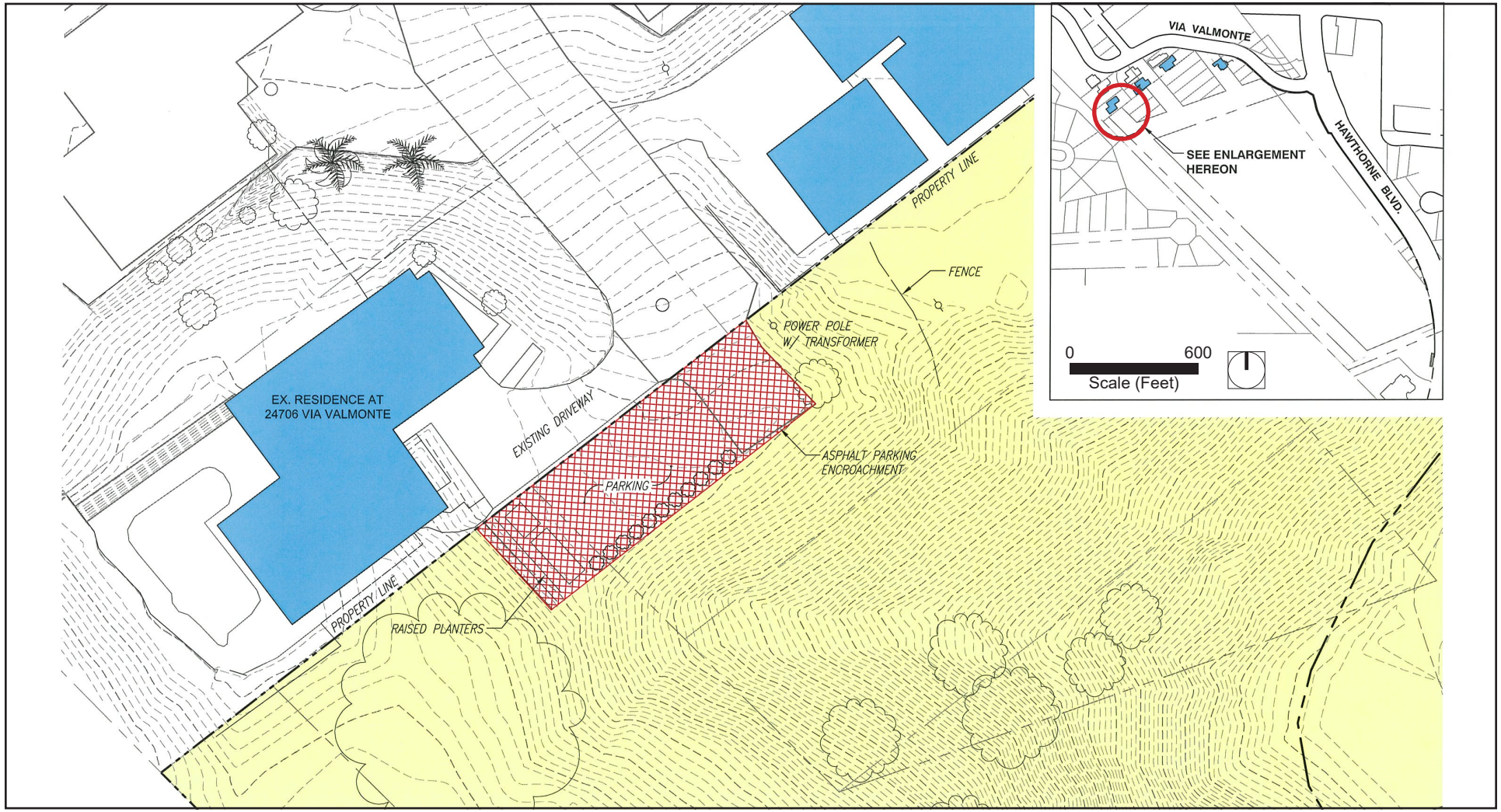
Figure 5.1-4a - 24706 Property Line Detail

5. Environmental Analysis



Source: KHR Associates, 2018

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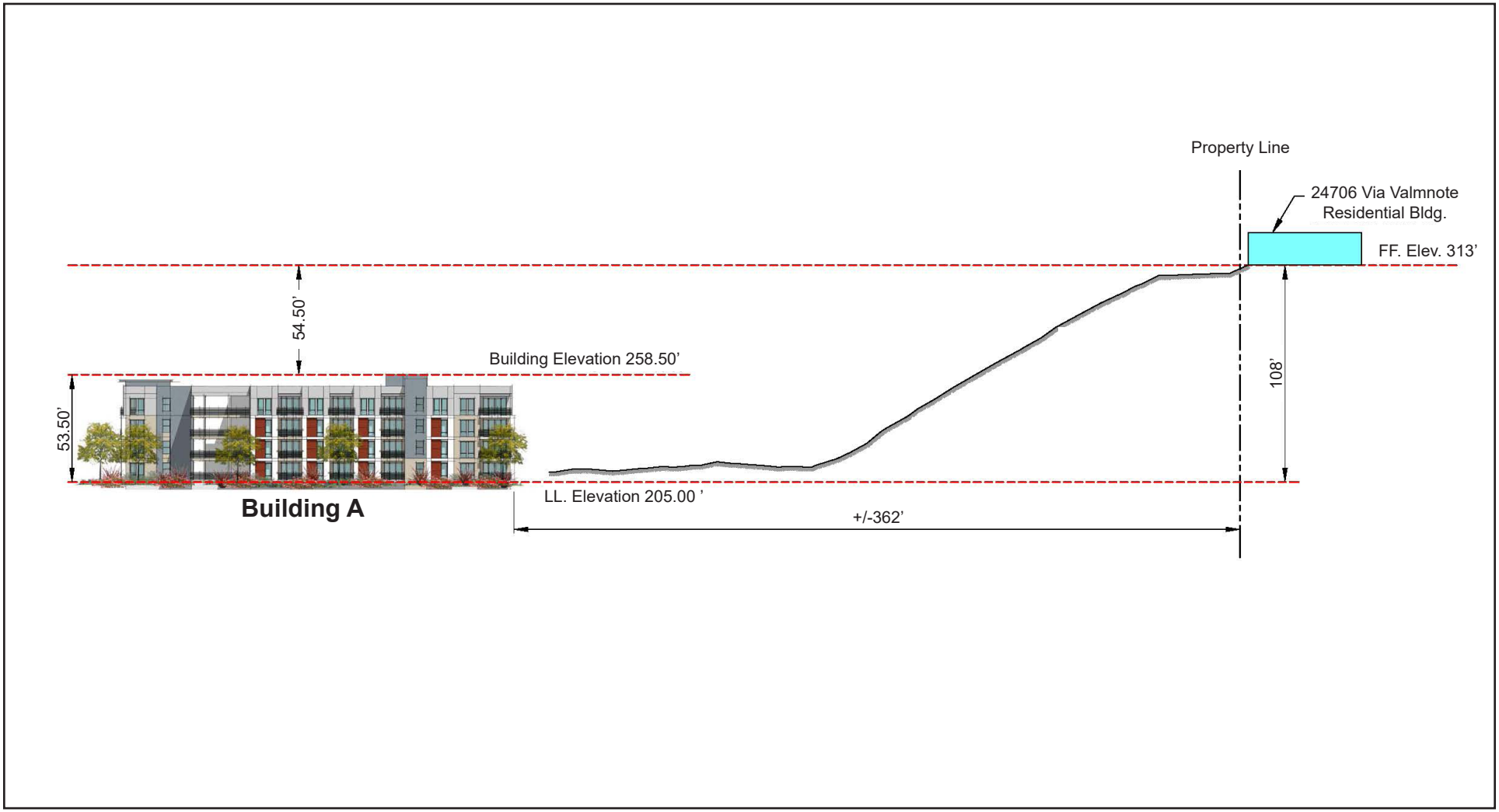
Figure 5.1-4b - 24706 Elevation

5. Environmental Analysis



Source: KHR Associates, 2019

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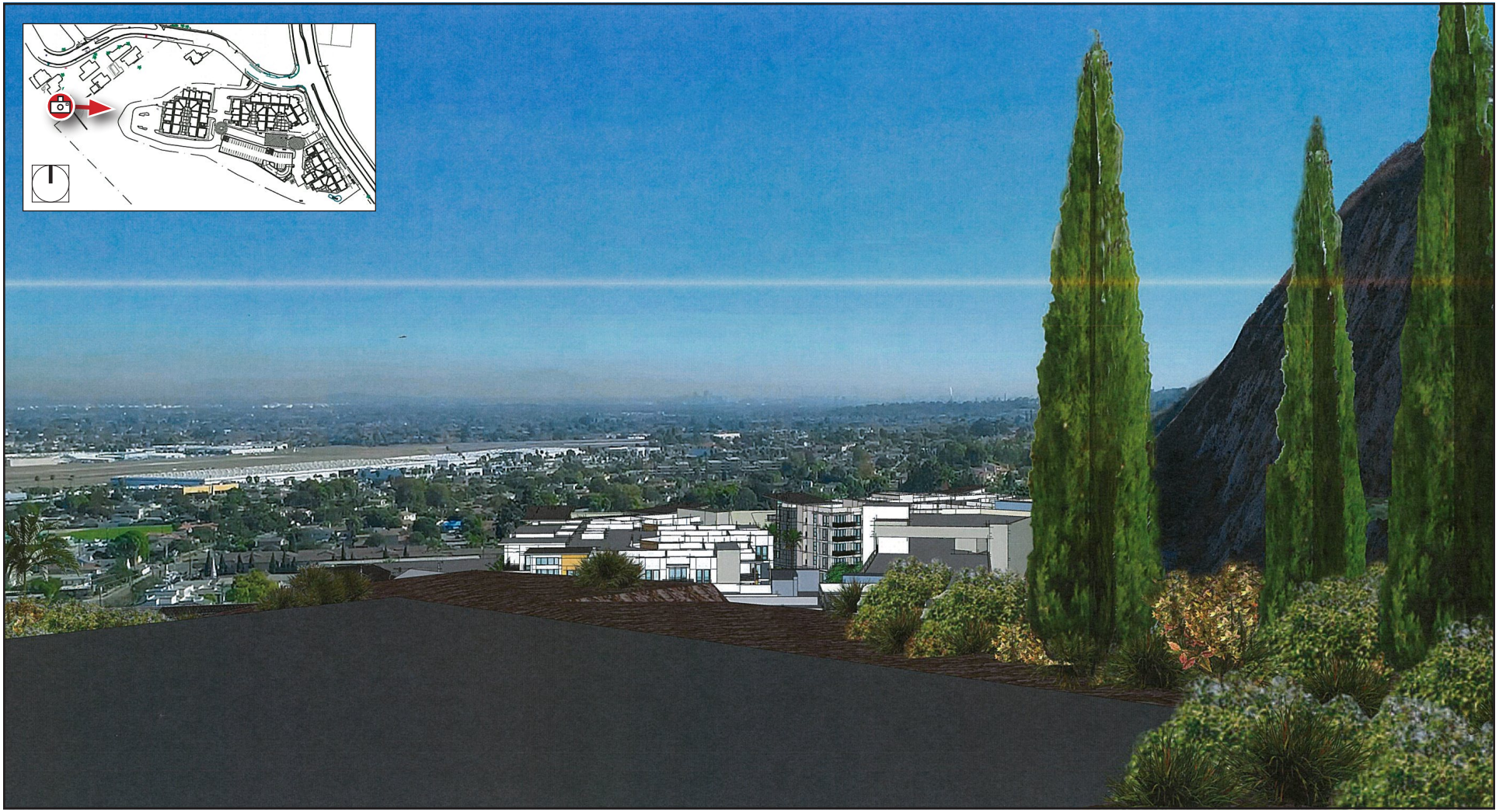
Figure 5.1-4c -24706 Visual Simulation

5. Environmental Analysis



View from residence at 24706 Via Valmnote towards proposed project.

Source: KHR Associates, 2018

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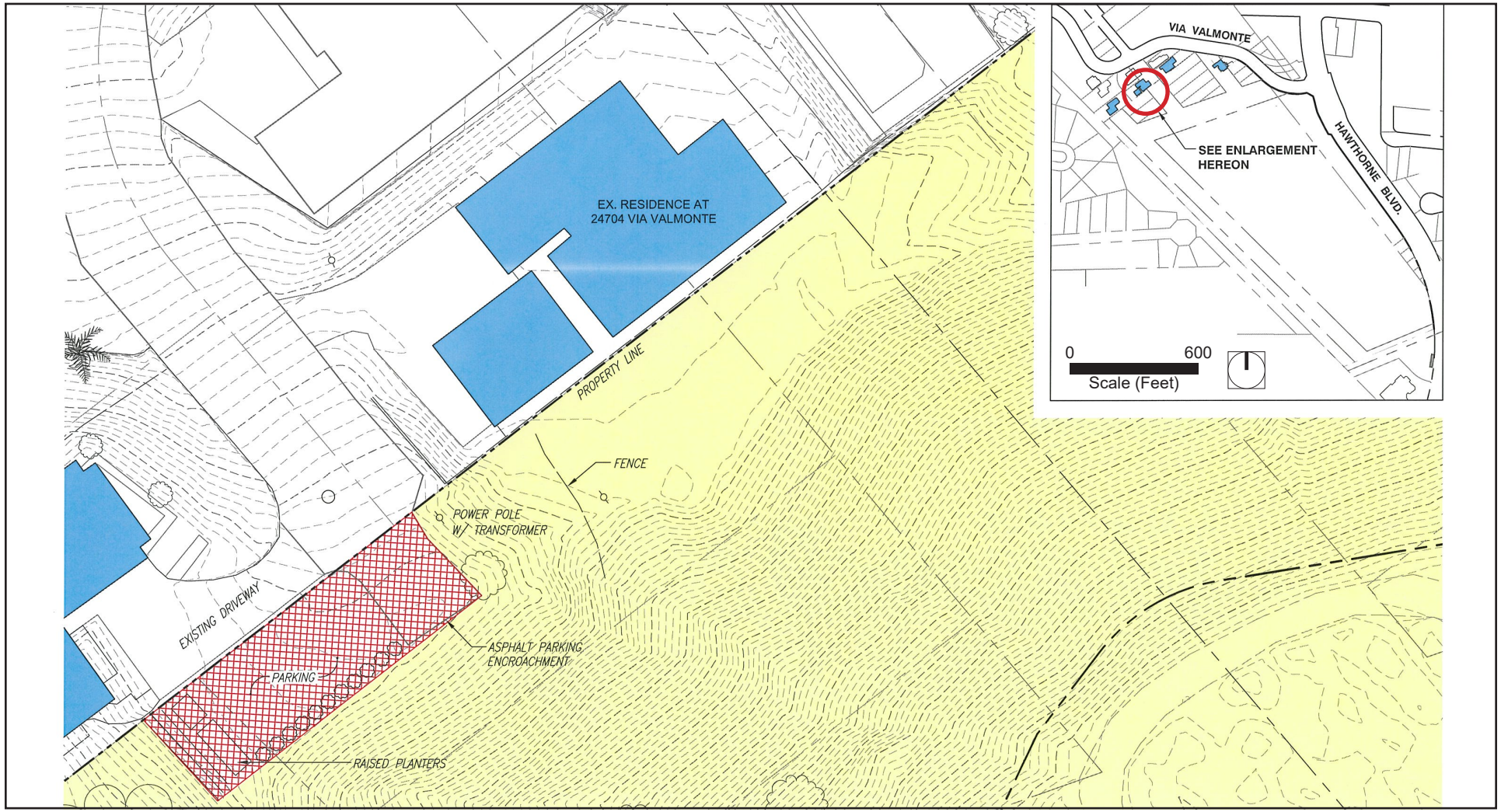
Figure 5.1-5a - 24704 Property Line Detail

5. Environmental Analysis



Source: KHR Associates, 2018

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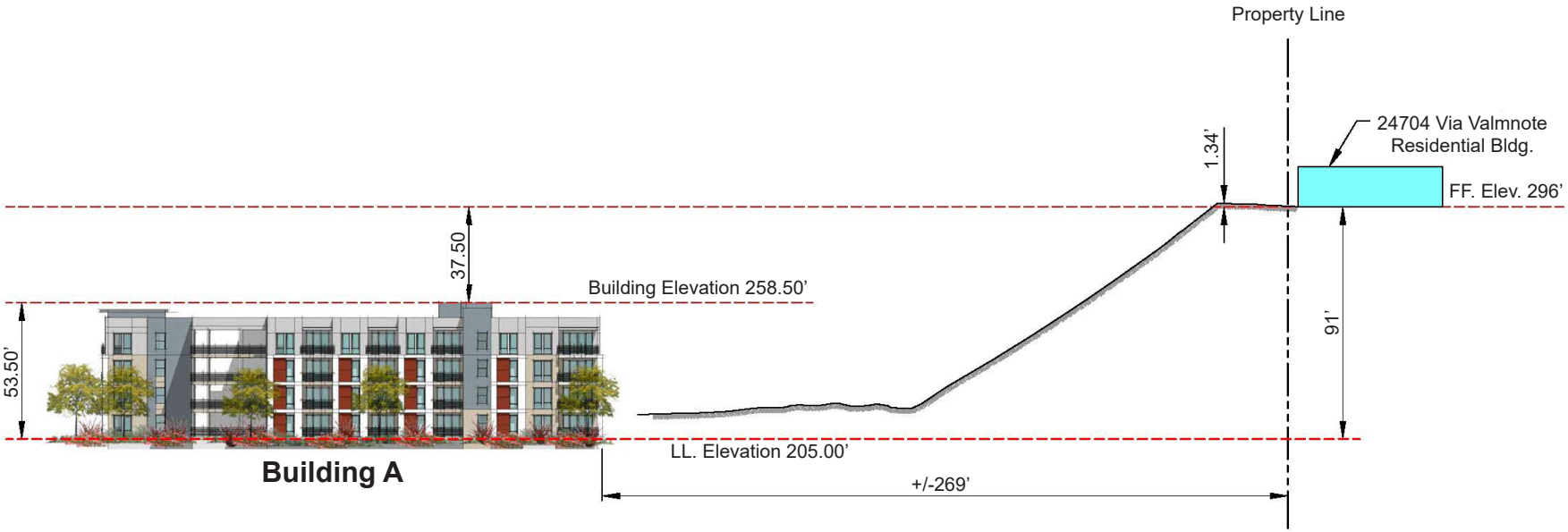
Figure 5.1-5b - 24704 Elevation

5. Environmental Analysis



0 80
Scale (Feet)

Source: KHR Associates, 2019

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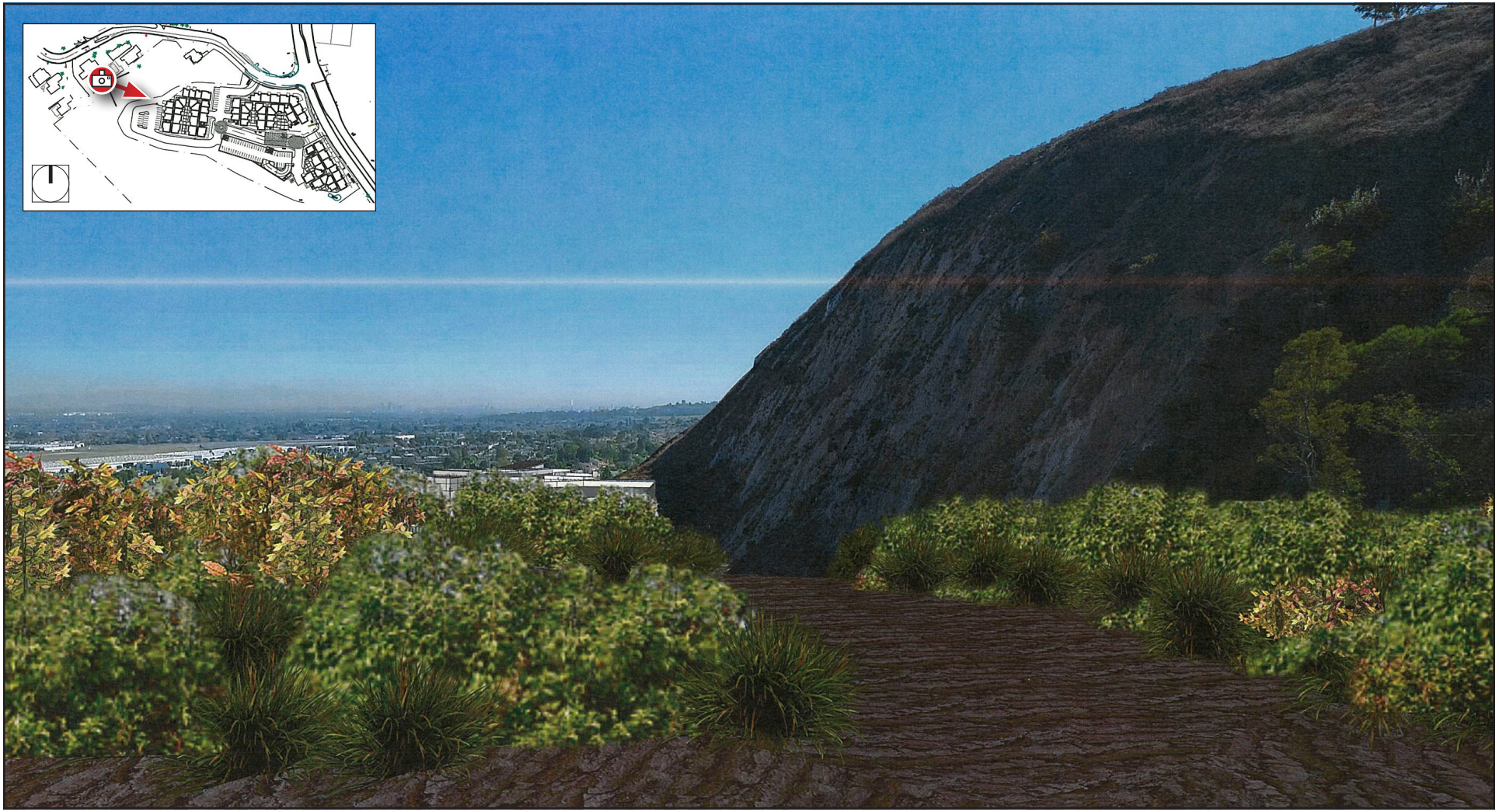
Figure 5.1-5c - 24704 Visual Simulation

5. Environmental Analysis



View from residence at 24704 Via Valmnote towards proposed project.

Source: KHR Associates, 2018

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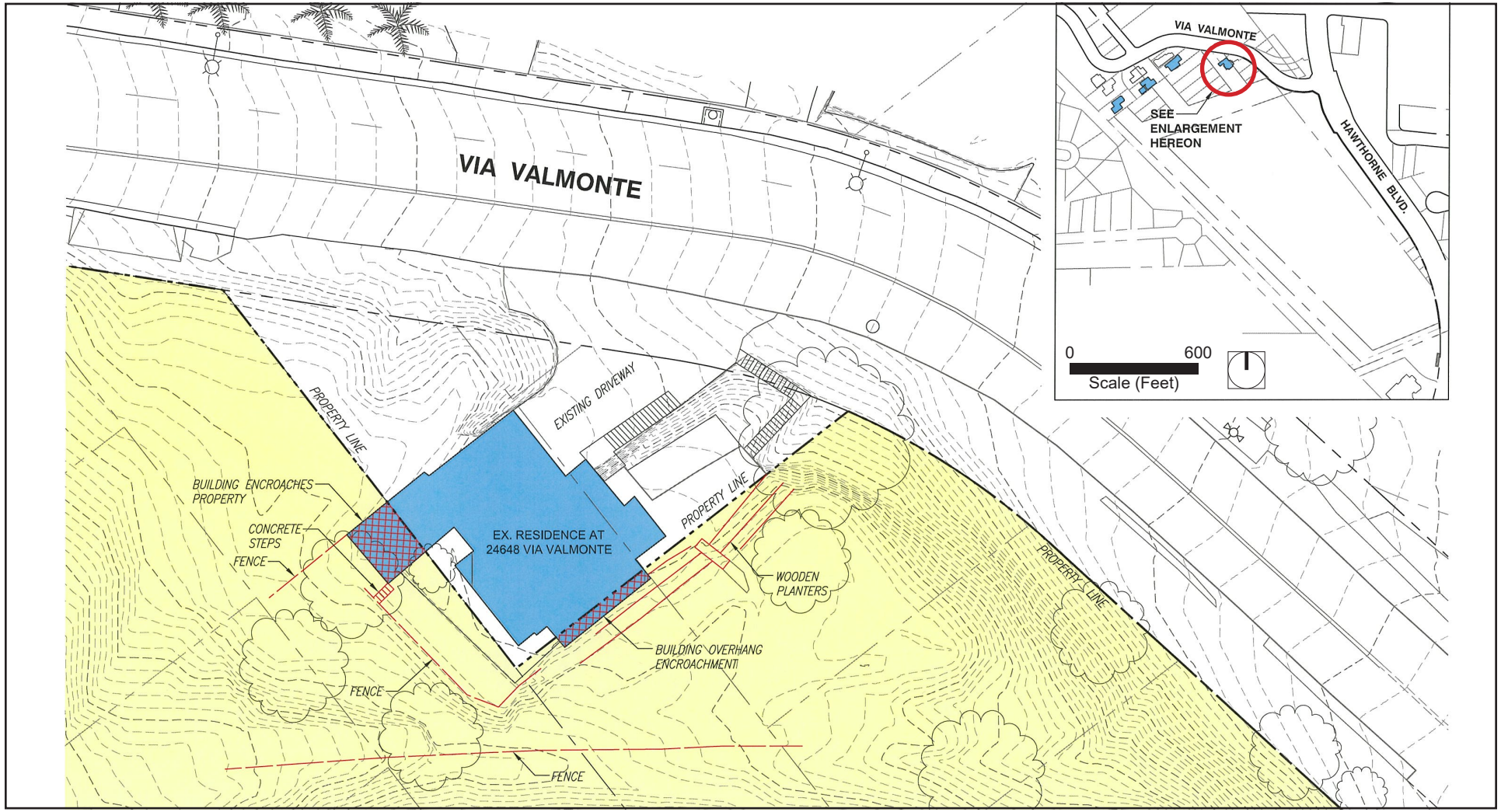
Figure 5.1-6a - 24648 Property Line Detail

5. Environmental Analysis



Source: KHR Associates, 2018

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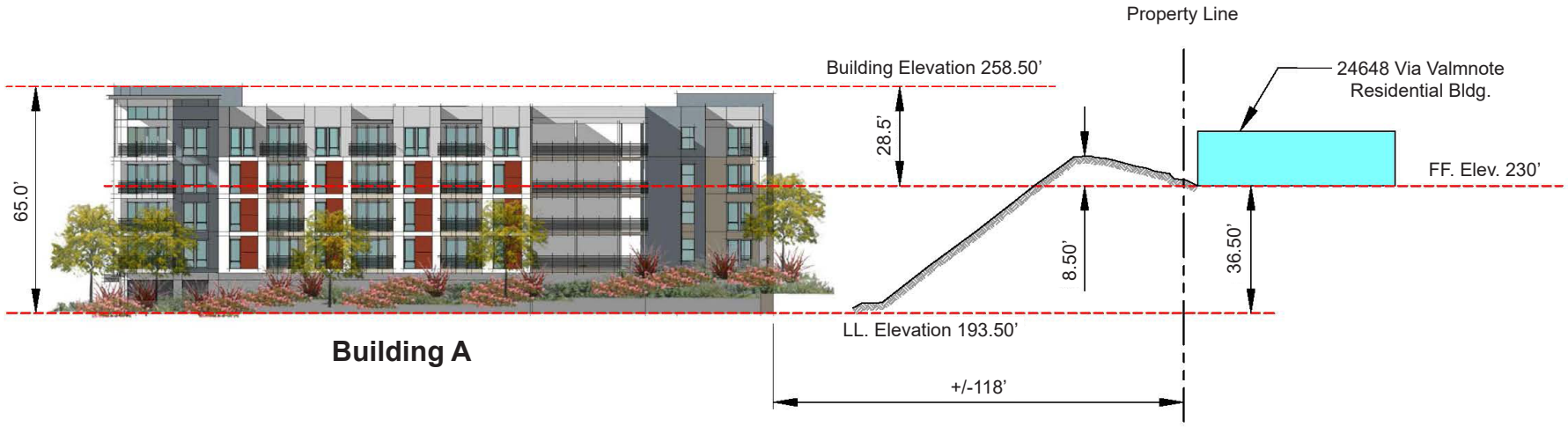
Figure 5.1-6b - 24648 Elevation

5. Environmental Analysis



0 50
Scale (Feet)

Source: KHR Associates, 2019

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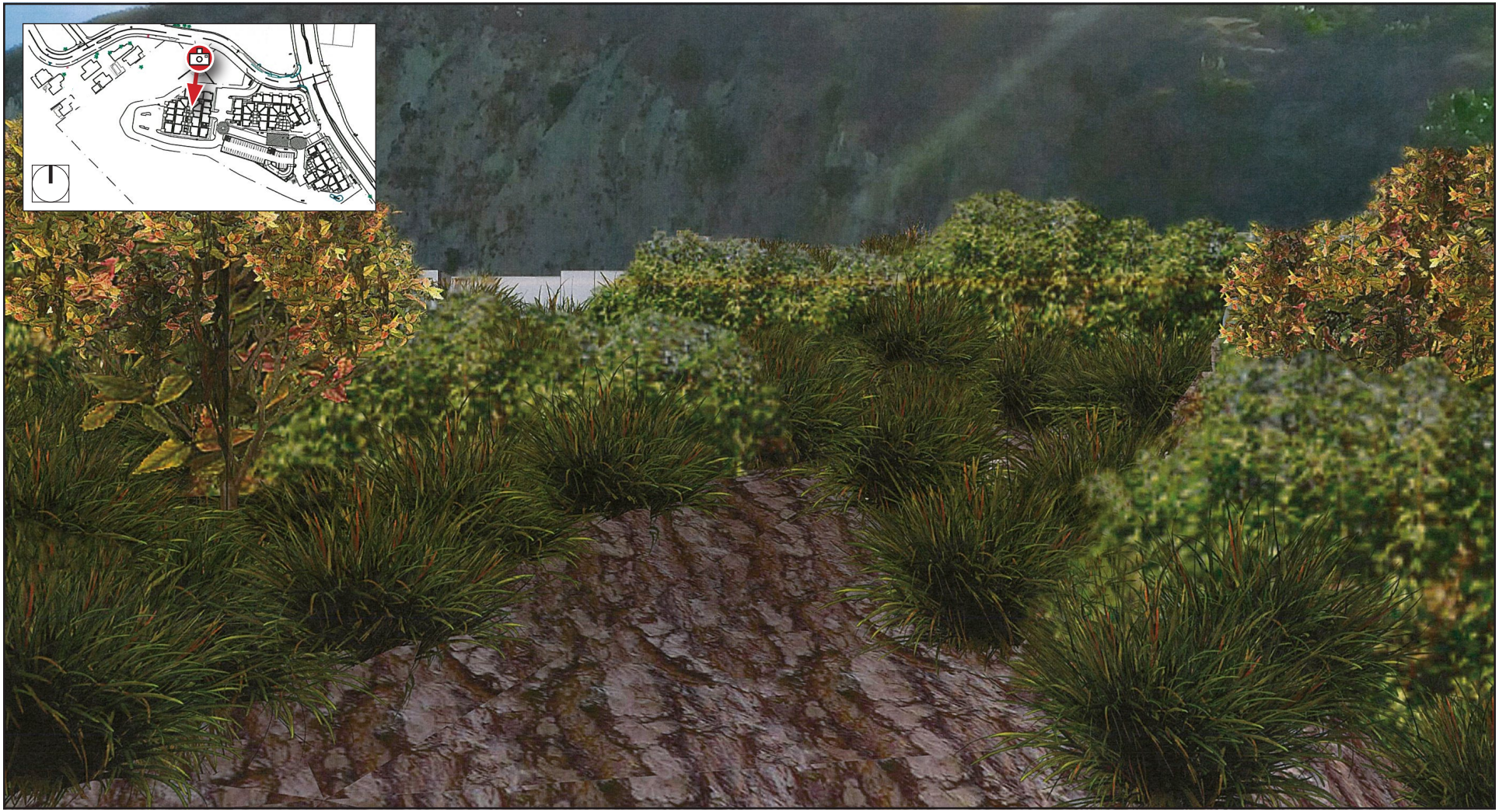
Figure 5.1-6c - 24648 Visual Simulation



View from residence at 24648 Via Valmnote towards proposed project.

Source: KHR Associates, 2018

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Figure 5.1-7a - 24660 Property Line Detail

5. Environmental Analysis

Source: KHR Associates, 2018

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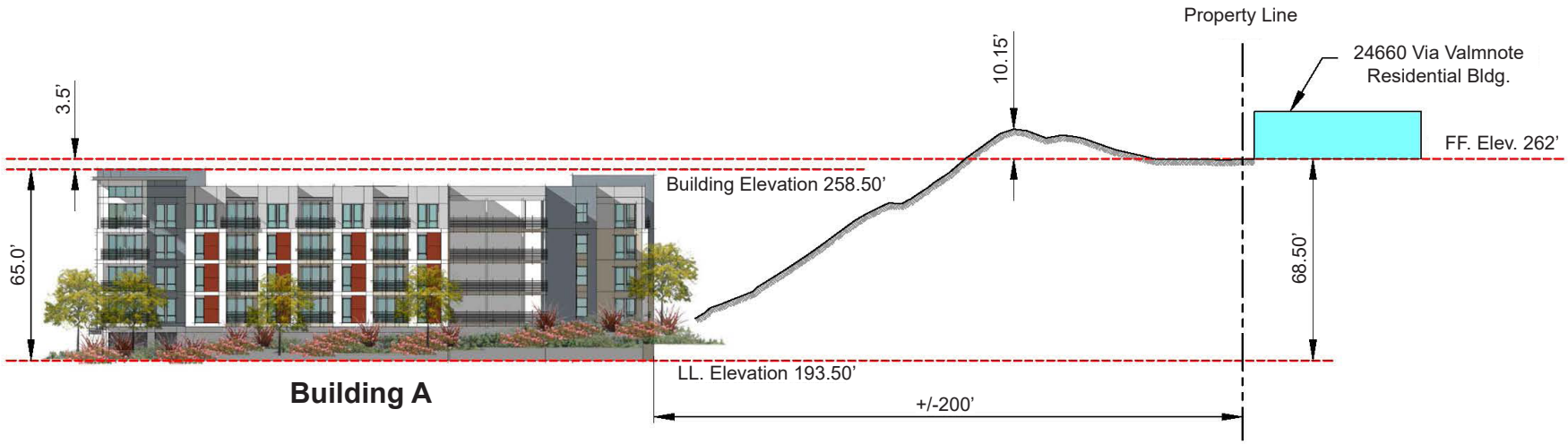
Figure 5.1-7b - 24660 Elevation



0 60
Scale (Feet)

Source: KHR Associates, 2019

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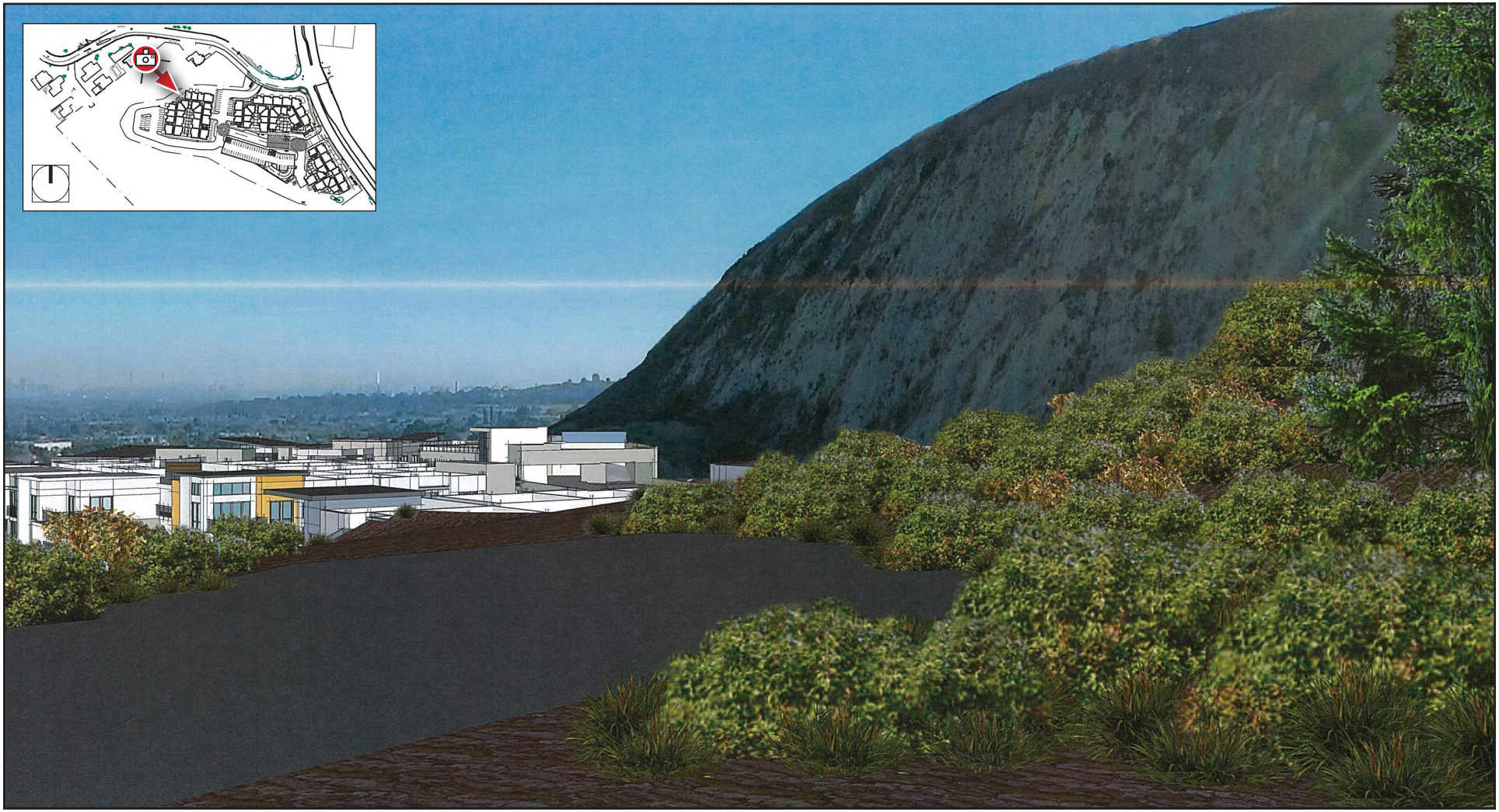
Figure 5.1-7c - 24660 Visual Simulation

5. Environmental Analysis



View from residence at 24660 Via Valmnote towards proposed project.

Source: KHR Associates, 2018

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Impact 5.1-2: The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. [Threshold AE-3]

All of the development would occur in the 5.71 acres of Lot 1. Lot 2 and Lot 3 would remain undeveloped, with Lot 3 maintained in its current state and would remain available to public access, similar to existing conditions. The Lot 1 development area would be improved through the addition of open spaces and increased landscaping, including landscaped courtyards and sidewalks. Approximately 96,385 feet of landscaping is proposed within the development area, primarily along the entrance residential buildings, surface parking area, courtyard, and along the perimeter of Lot 1. A landscaping plan would include landscape treatments and materials and would be submitted to the City Community Development Department for review and approval.

The following table, Table 5.1-1, *Hillside Overlay District Consistency Analysis*, presents a discussion of the applicable provisions of the Hillside Development Overlay related to aesthetic impacts to scenic vistas for the four residences for which visual simulations were prepared:

Table 5.1-1 Hillside Overlay District Consistency Analysis

	Hillside Overlay District Standard		
	Adverse impact on view light, air, and privacy	**Development location, planning, and design causing least intrusion**	**Harmonious, orderly, and attractive development**
24706 Via Valmonte	The highest portion of the new development would be situated approximately 54 feet below the grade elevation of the affected property. The uppermost decks, patios and rooftops of the proposed structures would be visible in the low-lying foreground, as shown in Figure 5.1.4c, but would be obstructed by the 362-foot setback from the property line. Long-range background views would remain unobstructed.	The proposed project would be designed in such a manner that the highest portion of the new development would be approximately 54 feet below the grade of the affected residence. Additionally, the closest project building, Building A, would be set back approximately 362 feet from the property line, minimizing views of the proposed project's residential decks and patios.	The proposed project would be developed in a manner that seeks to conform to the slope of Hawthorne Boulevard. Upon completion of the proposed project, the dominant feature would still be Slope 3 along the southern boundary of the project site. The project would provide for a uniform development that enhances the area through high-quality architecture and landscaping along a high-visibility corridor. Additionally, the project would provide approximately 96,385 square feet of landscaping, nearly all of which would be along the development area perimeter and around the perimeters of the four buildings.
24704 Via Valmonte	The highest portion of the new development would be situated 37 feet below the grade elevation of the affected property. The uppermost portions and rooftops of the proposed development would be situated below the elevation of the bluff, and rooftops of the structures would be visible in the low-lying foreground, as shown in Figure 5.1.5c. Long-range background views would remain unobstructed.	The proposed project would be designed in such a manner that the highest portion of the new development would be located approximately 37 feet below the grade of the affected residence. Additionally, the closest project building, Building A, would be set back approximately 269 feet from the property line, which would minimize the views of the proposed projects residential decks and patios.	Same analysis as above.
24648 Via Valmonte	The finished height of Building A would be approximately 28 feet above the grade of this residence;	The finished height of Building A would be approximately 28 feet above the grade of this residence; however, this residence is located	Same analysis as above.

	however, this residence is located behind the grade of Slope 1, which is approximately 8.5 feet higher than the property grade. As such, views of Building A would be partially obstructed by the existing Slope 1 (refer to Figure 5.1.6b). The uppermost decks, patios and rooftops of the proposed structures would be slightly visible in the low-lying area of the exposed southern slope, as shown in Figure 5.1.6c, while greater views of the southern remnant slope would remain in view.	behind the grade of Slope 1, which is approximately 8.5 feet higher than the property grade. As such, views of Building A would be partially obstructed by the existing Slope 1. Additionally, this property is set back approximately 118 feet from Building A. The setback and the partial obstruction from the existing Slope 1 would minimize the views of the proposed projects residential decks and patios.	
24660 Via Valmonte	The highest portion of the new development would be situated 3 feet below the grade elevation of the affected property. The uppermost decks, patios and rooftops of the proposed structures would be visible in the low-lying foreground, as shown in Figure 5.1.7c, largely in line with the grade of the bluff. Background scenic views of the surrounding area would remain unobstructed.	The proposed project would be designed in such a manner that the new development would be located approximately 3 feet below the grade of the affected residence. Additionally, the closest project building, Building A, would be set back approximately 200 feet from the property line, which would minimize the views of the proposed projects residential decks and patios.	Same analysis as above.

The conversion of degraded land to multi-family housing buildings and accompanying structures would not result in a decrease in the visual quality and character of the land. The proposed project would create a cohesive development on a currently unused, barren landscape. The new development buildings would be clustered such that the entirety of Lot 3 would be retained in its current state as open space. Project development would be seen from adjacent land uses and motorists along Hawthorn Boulevard and Via Valmonte. Applicable zoning and other regulations governing scenic quality of the project site include the Hillside Development Overlay, adherence to which protects against development infringing on light, air, view, and privacy of the neighborhood. Visibility of the proposed project from homes on Via Valmonte and fleeting views as seen from motorists on Hawthorne and Via Valmonte would not create a significant adverse impact on the visual quality and character of the site and its surroundings. Further, all residential common areas would be located in the project interior, reducing the interaction of project users and viewers.

The new development would be substantially taller and denser than existing commercial and residential development on Hawthorne Boulevard. In order to lessen the visual impact of the massing in the project vicinity, the development would conform to the slope of the street along Hawthorne Boulevard. As shown in Figure 5.1-8, *Street Elevations,* upon completion of the proposed project, the dominant feature of the project site would remain the remnant slope face from both Hawthorn Boulevard and Via Valmonte. Building frontage along both Hawthorne and Via Valmonte would be articulated and varied with landscaping and new street trees to provide a pleasing pedestrian environment. Additionally, the frontage of Building B along Hawthorne would be set back from the street by a minimum of 20 feet, and up to 28.5 feet at its widest point.

As shown in Figures 5.1.4a through Figure 5.1.7c, due to the topography of the single-family homes along Via Valmonte and the setback of Building A (the closest development building), the proposed project would not obstruct scenic views of existing residential uses, nor would these uses have direct views of project decks, patios or rooftops. The residence at 24648 Via Valmonte is 28 feet below the grade of the proposed building height; however, this residence is located behind the grade of Slope 1, which is approximately 8.5 feet higher than the property grade and set back approximately 118 feet from Building A. As such, views of Building A would be partially obstructed by the existing Slope 1. The setback and the partial obstruction from the existing Slope 1 would minimize the views of the proposed projects residential decks and patios. . Further, the proposed 65-foot-tall Building A is at the toe of the existing 250-foot cliff face and therefore does not block views of the cliff from the residence. For these reasons, the proposed project would not have an adverse impact upon the view, light, air and privacy of other properties in the vicinity

Based upon the information provided by the applicant to date, it appears that the proposed project may comply with the requirements of the Hillside and Coastal Overlay Zone. However, relevant information will still be forthcoming when the applicant installs the silhouette structures as required by the City's regulations. Thus, the final determination as to whether or not the proposed project complies with the requirement of Section 91.41.6, Planning and Design, of the City's Municipal Code is a determination that will not be made until the proposed project proceeds through the precise plan process. As discussed in Section 91.41.6, development in the hillside is subject to special review criteria based on view, light, air, and privacy concerns, and new development must be designed in a manner that will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity. In addition, development must be located, planned and designed so as to cause the least intrusion on the view, light, air and privacy of other properties in the vicinity. Section 91.41.6 is primarily focused upon a project's impacts on adjoining private properties and other properties in the immediate vicinity. Many of the aspects of the criteria are designed to protect individual property rights, property values, property investments, and personal rights/quality of life issues, such as privacy, rather than the type of significant environmental effects governed by CEQA. Development of the proposed project would therefore not conflict with applicable regulations governing scenic quality or adversely impact scenic quality, as no scenic views would be obstructed. Development of the project would not be in violation of the hillside overlay's protection of views and privacy. The project would enhance a degraded site with orderly development vistas and would not conflict with applicable zoning governing scenic quality. Impacts would be less than significant.

Impact 5.1-3: The proposed project would generate additional light and glare. [Threshold AE-4]

The following terms are used in this discussion:

- **Spill light**. The light emitted from an installation that falls outside the boundaries of the property on which the lighting system is installed.
- **Obtrusive light**. Spill light that causes annoyance, discomfort, distraction, or a reduction in the ability to see essential information such as traffic signals.
- **Glare**. The discomfort or impairment of vision experienced when the image is excessively bright in relation to the general surroundings.

- **Foot-candle** (fc). The recognized international unit for the measure of light (luminance) falling onto a surface. Foot-candles are used to express a measure of light (luminance) falling onto a surface. The following are examples of light levels expressed in foot-candles:

  - Sunny day: 3,000 fc
  - Professional baseball field lighting: 300 fc
  - Office: 50 to 75 fc
  - Residential lighting at night: 7 to 10 fc
  - Main road junction street lighting: 2.5 to 3.0 fc
  - Bright moonlight: 0.1 fc

The site and the surrounding area currently have average ambient nighttime light levels for a residential urbanized area. The City of Torrance has not established a threshold for spill or obtrusive light. As required by Torrance Municipal Code Section 92.30.5, the proposed project's lighting would be designed to be consistent with and sensitive to surrounding uses and would be installed in such a manner as to minimize glare for pedestrians and drivers and to minimize spillover lighting impacts. The cities of Rancho Palos Verdes, Palos Verde Estates and Rolling Hills Estates have similar ordinance regarding minimizing spill or obtrusive lighting, but do not have defined standards for spill or obtrusive light. Therefore, the City has determined that if the proposed project were to result in spill light above 1.0 fc on adjacent properties, a significant impact would occur. Other cities in Los Angeles County—including Beverly Hills, Duarte, and West Hollywood—that have similar conditions as the project area (urban built-out) have regulations limiting light spillover between 1.0 and 3.0 fc above ambient lighting. The City has adopted the 1.0 fc as a threshold for this EIR because it would be protective of the existing surrounding nighttime environment, where street lighting is the predominant source of light.

The scope and scale of the proposed development is greater in scale to the surrounding commercial and mixed uses along Hawthorne Boulevard, as well as the residential uses to the north and northwest. Light sources in the vicinity include street lighting along Hawthorne Boulevard, commercial lighting on Hawthorne, including the existing gas station to the north of Via Valmonte, and residential street lighting along Via Valmonte and the areas to the north and northwest.

Even with the consideration of design measures to lessen the effects of project lighting on the surrounding area to the greatest extent possible, in conjunction with the City's outdoor lighting standards, project implementation would potentially create new sources of light and glare inconsistent with City development standards. As the area is currently bare, undeveloped land, the addition of new development lighting would potentially create uplighting in a currently dark area, introducing various levels of skyglow that currently do not exist. While, this skyglow would be similar to existing sources of light along Hawthorne Boulevard and would be consistent with uses along this transportation corridor, it could potentially have an adverse impact existing residential uses along Via Valmonte due to the proximity of the project site to these uses.

There are no existing sources of light or glare on-site. Project development would introduce light sources onto the site from exterior and interior building lights, vehicle lights, walkway lights, and parking lot lights. Lighting

from the proposed project has the potential to impact existing residences adjacent to the proposed development along Via Valmonte, as well as the residences east of the site opposite Hawthorne Boulevard.

Project design would aim to limit the introduction of new sources of light or glare into the immediate and surrounding environment by the shielding of lights, use of non-reflective materials, adapting exterior building colors to match surroundings, and enclosing the parking garage. The unregulated use of interior lighting by residents and the non-uniformity of window shades and coverings could present instances of new lighting that have the potential to impact light and glare in the area.

Therefore, the proposed project's potential to create a new source of substantial light or glare that could adversely affect day or nighttime views in the area is potentially significant without the implementation of mitigation. A photometric study and lighting plan of the proposed project shall be conducted and prepared to accurately assess the aesthetic light and glare project impacts on the surrounding environment. Conclusions of the study shall be compared to applicable thresholds regarding the presence of spill lighting, of which the maximum allowable spillover is 1.0 foot-candle. Upon project construction, an on- and off-site measurement of existing light levels would verify compliance with the applicable thresholds to ensure that the project does not exceed stated thresholds in order to obtain an occupancy permit. Approval of the lighting plans and the subsequent field study would ensure that project lighting is consistent with City and Hillside Development Overlay standards. Mitigation measures AE-1 and AE-2 would be implemented.

5.1.4 Cumulative Impacts

Aesthetic impacts are localized to the project site and its immediate surroundings. Of the 19 "related projects" contemplated by the traffic Impact Analysis (see Appendix J to this DEIR), only one is close enough to the project site to create cumulative impacts when combined with the proposed project. The related project is a proposed 3-story Mixed-Use development that would be located on the northwestern corner of Via Valmonte and Hawthorne Boulevard. The related project as currently proposed would include 2,525 square feet of commercial office space on the ground level with 11 residential units on the upper two stories. This project would also have to show compliance with the requirement of Section 91.41.6, Planning and Design, of the City's Municipal Code, and would be required to prepare a Precise Plan, consistent with the Hillside and Coastal Overlay Zone requirements. The related project must be designed in a manner that will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity. In addition, the related development must be located, planned and designed so as to cause the least intrusion on the view, light, air and privacy of other properties in the vicinity. Furthermore, the parcels adjacent to and surrounding the project site are largely built out, are generally small in size, and in most cases contain established single-family residential uses or low intensity commercial uses. For these reasons, it is unlikely that they will be redeveloped with more intense development in the near future or that a cumulative shift in neighborhood character would occur. In consideration of these factors, the project's contribution to cumulative aesthetic impacts is less than considerable and, therefore, less than cumulatively significant.

Due to the highly developed nature of the City of Torrance and the existence of light and glare from existing commercial and residential uses on the surrounding properties, the proposed project is not anticipated to add significantly to the creation of nighttime light and glare in the project vicinity. As stated above, the adjacent

development project proposed would be required to limit intrusive light that would impact sensitive viewers in the nearby vicinity that would generate impacts that would combine with those of the proposed project. Therefore, the proposed project's contribution to cumulative light and glare impacts is less than considerable, and therefore is less than cumulatively significant.

Level of Significance before Mitigation: Cumulative aesthetic impacts related to visual character, scenic views, shade and shadow, and light and glare would be less than significant.

5.1.5 Existing Regulations and Standard Conditions

This analysis assumes compliance with all applicable laws. The following codes, rules, and regulations pertain to aesthetics and were described in detail in Section 5.1.1.1 of this DEIR.

State

- California Code of Regulations, Title 24, Part 6: Building Energy Efficiency Standards for Residential and Nonresidential Buildings

Local

- City of Torrance Development Code
- City of Torrance General Plan
- City of Torrance Municipal Code, Section 92.30.5, Lighting
- City of Torrance Municipal Code, Article 41 - R-H Hillside and Local Coastal Overlay Zone

5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.1-1, and 5.1-2.

Without mitigation, this impact would be **potentially significant**:

- Impact 5.1-3 The proposed project would create additional light and glare

5.1.7 Mitigation Measures

AE-1 Prior to issuance of a building permit, the applicant shall submit a photometric study and lighting plan of the proposed project to the City of Torrance Community Development Department for review. The Lighting Plan shall demonstrate compliance with the following:

- The intensity and location of lights on buildings shall be subject to the Community Development Director's approval.
- All lighting shall be shielded and directed downward onto the project property to minimize potential light escape and/or spillover onto adjacent properties.

- All site-lighting fixtures shall be provided with a flat glass lens. Photometric calculations shall indicate the effect of the flat glass lens fixture efficiency.
- All residential deck and patio lighting shall incorporate full cutoff light fixtures, which is defined as a luminaire light distribution where no light is emitted above the horizontal, and where the intensity at 80 degrees from nadir is no greater than 100 candela per 1000 lamp lumens.
- Lighting design and layout shall limit spill light to no more than 1.0 foot-candle at the property line of the surrounding neighbors.
- Glare shields may be required for select light standards.

Conclusions of the study shall be compared to applicable thresholds regarding the presence of spill lighting, set at 1.0 foot-candle of spill light at the project property line.

AE-2 Upon completion of the project's construction, prior to issuance of any occupancy permit, a qualified electronic engineer, as approved by the City's Community Development Department, shall take field measurements along the property line of the project site and the residences at 24706, 24704, 24660, and 24648 Via Valmonte to demonstrate that actual spill light levels do not exceed the levels indicated in the approved Lighting Plan.

Each external lighting luminaire shall be situated and adjusted so that no lighting levels at the property line of the residential properties exceed 1.0 foot-candle, and no direct beam leaves the project site.

The results of these field measurements shall be submitted to the Community Development Department for approval.

5.1.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with aesthetics to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to aesthetics remain.

5.1.9 References

Torrance, City of. 2010, April 6 (adopted). City of Torrance General Plan. https://www.torranceca.gov/our-city/community-development/general-plan/plan-2009.

———. n.d. Hillside Overlay Area. https://www.torranceca.gov/our-city/community-development/unsorted/hillside.

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5.2 AIR QUALITY

This chapter includes an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to air quality. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing air quality setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts. The analysis is based in part on:

Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Solana Torrance Project, Dudek, March 2019 (included as Appendix B of this Draft EIR).

Fifty-two comments relating to air quality were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential impacts that the pollutant emissions relating to construction activities, including the release of fugitive dust including diatomaceous earth, would have on the neighboring community. Concerns were also received regarding the emissions from operation of the proposed project, including new vehicle trips. The potential impacts of the construction and operation of the new development and its new sources of criteria pollutant emissions have been analyzed in this section.

5.2.1 Environmental Setting

5.2.1.1 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines that are related to protection and preservation of air quality and applicable to the proposed project are summarized below.

Federal Regulations

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The United States Environmental Protection Agency (EPA) is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric ozone (O_3) protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO (carbon monoxide), NO_2 (nitrogen dioxide), SO_2 (sulfur dioxide), PM_{10} (coarse particulates), $PM_{2.5}$ (fine particulates), and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every five years to determine whether adopted

standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify national emission standards for HAPs to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State Regulations

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

The CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 5.2-1, *Ambient Air Quality Standards for Criteria Pollutants*.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
O_3	1 hour	0.09 ppm (180 µg/m^3)	—	Same as primary standard[6]
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)[6]	
NO_2[7]	1 hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
SO_2[8]	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[7]	—
	Annual	—	0.030 ppm (for certain areas)[7]	—
PM_{10}[9]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	—	
$PM_{2.5}$[9]	24 hours	—	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
Lead[10,11]	30-day average	1.5 µg/m^3	—	—
	Calendar quarter	—	1.5 µg/m^3 (for certain areas)[11]	Same as primary standard
	Rolling 3-month average	—	0.15 µg/m^3	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	—	—
Vinyl chloride[10]	24 hours	0.01 ppm (26 µg/m^3)	—	—
Sulfates	24- hours	25 µg/m^3	—	—
Visibility reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70 percent	—	—

Source: Appendix B.
Notes: O_3 = ozone; ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter; NO_2 = nitrogen dioxide; CO = carbon monoxide; mg/m^3= milligrams per cubic meter; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; PST = Pacific Standard Time.

[1] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[5] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[6] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[7] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[8] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[10] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[11] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California toxic air contaminants (TACs) list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables with which manufacturers must comply and according to which existing operators must upgrade their diesel- powered equipment. There are several Airborne Toxic Control Measures that reduce

diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local Regulations

South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the South Coast Air Basin (SoCAB), where the project site is located. The SCAQMD operates monitoring stations in the SoCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD's air quality management plans (AQMPs) include control measures and strategies to be implemented to attain state and federal ambient air quality standards in the SoCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The most recent adopted AQMP is the 2016 AQMP, which was adopted by the SCAQMD governing board on March 3, 2017. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). Because mobile sources are the principal contributor to the SoCAB's air quality challenges, SCAQMD has been and will continue to be closely engaged with CARB and the EPA, who have primary responsibility for these sources.

Applicable Rules

Emissions that would result from mobile, area, and stationary sources during construction and operation of the project are subject to the rules and regulations of SCAQMD. The SCAQMD rules applicable to the project may include:

- **Rule 401, Visible Emissions.** This rule establishes the limit for visible emissions from stationary sources.
- **Rule 402, Nuisance.** This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403, Fugitive Dust.** This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property

line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.

- **Rule 431.2, Sulfur Content of Liquid Fuels.** The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose of reducing the formation of SO_X and particulates during combustion and of enabling the use of add-on control devices for diesel- fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile sources.

- **Rule 1110.2, Emissions from Gaseous- and Liquid-Fueled Engines.** This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_X, volatile organic compounds (VOC), and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule because they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.

- **Rule 1113, Architectural Coatings.** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

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 and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization for the Southern California region and is the largest metropolitan planning organization in the United States.

On April 7, 2016, SCAG's Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15- 12 had been met (SCAG 2016). The SCAQMD 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

City of Torrance

The City's General Plan (2010) includes various goals and policies designed to help improve air quality in the City. In order to reduce mobile source emissions, the City has adopted a Trip Reduction Ordinance (Municipal Code Division 9 Chapter 10) to incentivize walking, cycling, use of public transit, and carpooling to work. Energy efficiency in buildings is addressed under energy conservation and sustainable building practice topics

in the General Plan update. Trip reduction strategies are addressed in the land use and circulation elements. The land use element includes policies to encourage site design that is conducive to walking. To reduce vehicle traffic and congestion in Torrance, the circulation element includes policies to encourage the use of alternative forms of transportation and strategies to be implemented by employers, developers, and merchants. Transportation demand management strategies include promoting the use of carpools, vanpools, work-related transit use, bicycling, and walking as a means to improve air quality and to minimize congestion on the local and regional network.

As discussed in the General Plan, policies pertaining to improving air quality are addressed in multiple chapters of the General Plan. Objective CR.13 and associated policies are presented below (Torrance 2010).

- **OBJECTIVE CR.13:** To contribute to the improvement of local and regional ambient air quality to benefit the health of all.
  - **Policy CR.13.1:** Continue to participate in the efforts of the CARB and the SCAQMD to meet State and federal air quality standards.
  - **Policy CR.13.2:** Work with neighboring cities to implement local and regional projects that improve mobility on freeways and railways, reduce emissions, and improve air quality.
  - **Policy CR.13.3:** Support regional air quality goals through conscientious land use and transportation planning and the implementation of resource conservation measures.
  - **Policy CR.13.4:** Balance the achievement of clean air with other major goals of the City.
  - **Policy CR.13.5:** Support air quality and energy and resource conservation by encouraging alternative modes of transportation such as walking, bicycling, transit, and carpooling.
  - **Policy CR.13.6:** Promote citizen awareness and participation in programs to reduce air pollution and traffic congestion.
  - **Policy CR.13.7:** Encourage the use of alternative fuel vehicles and re-refined oil.
  - **Policy CR.13.8:** Promote energy-efficient building construction and operation practices that reduce emissions and improve air quality.

Many air quality strategies result in co-benefits by reducing GHG emissions and vice versa.[1]

5.2.1.2 EXISTING CONDITIONS

The project site is within the SoCAB, a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

Meteorological and Topographical Conditions

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. The SoCAB's air pollution problems are a consequence of the combination of emissions from the nation's second largest urban

[1] See Section 5.6, *Greenhouse Gas Emissions,* of this EIR for a discussion of the City's GHG emissions reduction policies.

area, meteorological conditions adverse to the dispersion of those emissions, and mountainous terrain surrounding the SoCAB that traps pollutants as they are pushed inland with the sea breeze (SCAQMD 2017). Meteorological and topographical factors that affect air quality in the SoCAB are described below.[2]

Climate

The SoCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The general 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 SoCAB is a function of the area's natural physical characteristics (e.g., weather and topography) and of manufactured influences (e.g., development patterns and lifestyle). Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in the SoCAB. The average annual temperature varies little, averaging 75°F. However, with a less-pronounced oceanic influence, the eastern inland portions of the SoCAB show greater variability in annual minimum and maximum temperatures. All portions of the SoCAB have recorded temperatures over 100°F in recent years. Although the SoCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the SoCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the SoCAB. Precipitation in the SoCAB is typically 9 to 14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas.

The average low in Torrance is reported at 44.2°F in January, and the average high is 78.6°F in August (Torrance 2009). In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November to April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 13.58 inches per year (Torrance 2009).

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen [NO_X][3]) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources. Southern California has abundant sunshine that drives the photochemical formation of ozone (O_3) and a substantial portion of fine particulate matter ($PM_{2.5}$; particulate matter with an aerodynamic diameter less than or equal to 2.5 microns). In the SoCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Due to the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas.

[2] The discussion of meteorological and topographical conditions of the SoCAB is based on information provided in the Final 2016 Air Quality Management Plan (SCAQMD 2017).
[3] NO_X is a general term describing mixes of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen.

Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air mix and disperse into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in coastal Southern California. The cool, damp, and hazy sea air capped by coastal clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above mean sea level (amsl), the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes.

At a height of 1,200 feet amsl, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet amsl, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

Mixing heights for inversions are lower in the summer and inversions are more persistent, being partly responsible for the high levels of O_3 observed during summer months in the SoCAB. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods, allowing them to form secondary pollutants by reacting in the presence of sunlight. The SoCAB has a limited ability to disperse these pollutants due to typically low wind speeds and the surrounding mountain ranges.

Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants, as well as TACs, are discussed in the following paragraphs.[4] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

- **Ozone.** O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_X and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm

[4] The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's Criteria Air Pollutants (EPA 2016a) and the California Air Resources Board's Glossary of Air Pollutant Terms (CARB 2016a).

temperatures, and cloudless skies. Ozone exists in the upper atmosphere O_3 layer (stratospheric ozone) and at the Earth's surface in the troposphere (ozone).[5] The O_3 that the EPA and CARB regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects. Stratospheric O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

Ozone in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

- **Nitrogen Dioxide.** Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. Nitrogen oxides (NO_X) play a major role, together with VOCs, in the atmospheric reactions that produce O_3. Nitrogen dioxide is formed from fuel combustion under high temperature or pressure. In addition, NO_X is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers. Nitrogen dioxide can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016b).

- **Carbon Monoxide.** Carbon monoxide (CO) is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. Carbon monoxide is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. Carbon monoxide concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. Carbon monoxide from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

  In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

[5] The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

- **Sulfur Dioxide.** Sulfur dioxide (SO_2) is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

  SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. Sulfur dioxide can also yellow plant leaves and erode iron and steel.

- **Particulate Matter.** Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. 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. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_X), NO_X, and VOCs.

  $PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract.

Noncriteria Air Pollutants

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two- step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90 percent of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$ (CARB 2016b). DPM is typically composed of carbon particles ("soot," also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016b). The CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM 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 construction equipment, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016b). Those most vulnerable to noncancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as

"nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS. Table 5.2-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*, depicts the current attainment status of the project site with respect to the NAAQS and CAAQS.

Table 5.2-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	Designation/Classification	
	State	Federal
Ozone (O_3) – 1 hour	**Nonattainment**	No federal standard
Ozone (O_3) – 8 hour	**Nonattainment**	**Extreme nonattainment**
Nitrogen dioxide (NO_2)	Attainment	Unclassifiable/attainment
Carbon monoxide (CO)	Attainment	Attainment/maintenance
Sulfur dioxide (SO_2)	Attainment	Unclassifiable/attainment
Coarse particulate matter (PM_{10})	**Nonattainment**	Attainment/maintenance
Fine particulate matter ($PM_{2.5}$)	**Nonattainment**	**Serious nonattainment**
Lead (Pb)	Attainment	Nonattainment
Hydrogen sulfide	Unclassified	No federal standard
Sulfates	Attainment	No federal standard
Visibility-reducing particles	Unclassified	No federal standard
Vinyl chloride	No designation	No federal standard

Sources: Appendix B.
Notes: **Bold text** = not in attainment; attainment = meets the standards; attainment/maintenance = achieve the standards after a nonattainment designation; nonattainment = does not meet the standards; unclassified or unclassifiable = insufficient data to classify; unclassifiable/attainment = meets the standard or is expected to meet the standard despite a lack of monitoring data.

In summary, the SoCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. The SoCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SoCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While the SoCAB has been designated as nonattainment for the federal rolling three-month average lead standard, it is designated attainment for the state lead standard (EPA 2016c; CARB 2016d).

Despite the current nonattainment status for O_3 and $PM_{2.5}$, air quality in the SoCAB has generally improved since the inception of air pollutant monitoring in 1976. This improvement is mainly due to lower-polluting on-road motor vehicles, more stringent regulation of industrial sources, and the implementation of emission reduction strategies by SCAQMD. Despite continued population growth, air quality has improved significantly over the years, primarily due to the impacts of the region's air quality control program. PM_{10} levels have declined almost 50 percent since 1990, and $PM_{2.5}$ levels have declined 50 percent since measurements began in 1999 (SCAQMD 2013). Similar improvements are observed with O_3, although the rate of O_3 decline has slowed in recent years.

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. SCAQMD monitors local ambient air quality at the project site. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2014 to 2016 are presented in Table 5.2-3, *Ambient Air Quality Monitoring Summary*. The Long Beach Webster Street monitoring station, at 2425 Webster Street, is the nearest air quality monitoring station, approximately 7.5 miles east from the project site. The data collected at this station are considered representative of the air quality experienced in the project vicinity. Air quality data for O_3, NO_2, CO, SO_2, and PM_{10} from the Long Beach Webster Street monitoring station are provided in Table 5.2-3. Because $PM_{2.5}$ is not monitored at the Webster Street monitoring station, $PM_{2.5}$ measurements were taken from the Long Beach North Long Beach Boulevard monitoring station (3648 North Long Beach Boulevard, approximately 9.5 miles east-northeast of the project site). The number of days exceeding the ambient air quality standards is also shown in Table 5.2-3.

Table 5.2-3 Ambient Air Quality Monitoring Summary

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2014	2015	2016	2014	2015	2016
Ozone (O_3)										
Long Beach Webster Street	ppm	Maximum 1- hour concentration	State	0.09	0.087	0.087	0.079	0	0	0
	ppm	Maximum 8- hour concentration	State	0.070	0.72	0.067	0.059	1	0	0
			Federal	0.070	0.72	0.066	0.059	1	0	0
Nitrogen Dioxide (NO_2)										
Long Beach Webster Street	ppm	Maximum 1- hour concentration	State	0.18	0.135	0.101	0.075	0	0	0
			Federal	0.100	0.1359	0.1018	0.0756	2	1	0
	ppm	Annual concentration	State	0.030	ND	0.020	0.018	—	—	—
			Federal	0.053	—	—	—	—	—	—
Carbon Monoxide (CO)										
Long Beach Webster Street	ppm	Maximum 1- hour concentration	State	20	—	—	—	—	—	—
			Federal	35	3.7	3.3	3.3	0	0	0
	ppm	Maximum 8- hour concentration	State	9.0	ND	—	—	0	0	—
			Federal	9	2.6	2.2	2.2	0	0	0
Sulfur Dioxide (SO_2)										
Long Beach Webster Street	ppm	Maximum 1- hour concentration	Federal	0.075	0.0147	0.0375	0.0178	0	0	0
	ppm	Maximum 24- hour concentration	Federal	0.14	0.030	0.046	0.036	0	0	0

	ppm	Annual concentration	Federal	0.030	0.0132[1]	0.0099[1]	0.092	0	0	0
Coarse Particulate Matter (PM_{10})[2]										
Long Beach Webster Street	µg/m³	Maximum 24-hour concentration	State	50	84.0	79.0	75.3	19.3 (3)	37.6 (6)	ND (8)
			Federal	150	84.0	80.0	75.0	0.0 (0)	0.0 (0)	0.0 (0)
	µg/m³	Annual concentration	State	20	29.6	30.9	ND	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[2]										
Long Beach North Long Beach Boulevard	µg/m³	Maximum 24-hour concentration	Federal	35	51.5	54.6	29.3	ND (2)	3.1 (3)	0.0 (0)
	µg/m³	Annual concentration	State	12	ND	ND	10.3	—	—	—
			Federal	12.0	ND	10.8	10.3	—	—	—

Sources: Appendix B.
Notes: ppm = parts per million by volume; ND = insufficient data available to determine the value; — = not available; µg/m3 = micrograms per cubic meter.
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.
Long Beach Webster Street Monitoring Station is at 2425 Webster Street, Long Beach, California 90810.
Long Beach North Long Beach Boulevard Monitoring Station is at 3648 North Long Beach Boulevard, Long Beach, California 90807.
[1] Mean does not satisfy minimum data completeness criteria.
[2] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

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. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The SCAQMD identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (Dudek 2019). Residential land uses are located to the north, east, and west of the project. The closest off-site sensitive receptors to the project site include residences located approximately 77 feet north of the project's limits of construction.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would: [6]

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

AQ-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The SCAQMD has established Air Quality Significance Thresholds, as revised in March 2015, that set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality under existing and cumulative conditions. The quantitative air quality analysis provided herein applies the SCAQMD thresholds identified in Table 5.2-4, *SCAQMD Air Quality Significance Thresholds*, to determine the potential for the project to result in a significant impact under CEQA.

Table 5.2-4 SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Air Pollutant	**Construction (Pounds per Day)**	**Operation (Pounds per Day)**
Reactive Organic Gases (ROG/VOC)	75	55
Nitrogen Oxides (NO_X)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO_X)	150	150
Coarse Particulates (PM_{10})	150	150
Fine Particulates ($PM_{2.5}$)	55	55
Lead[1]	3	3
TACs and Odor Thresholds		
TACs[2]	Maximum incremental cancer risk ≥ 10 in 1 million Chronic and acute hazard index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[3]		
NO_2 1-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state)	

[6] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018. Impacts associated with Threshold 2 analyzed in the Initial Study: *Violate any air quality standard or contribute substantially to an existing or projected air quality violation*, was deleted from CEQA Guidelines Appendix G Update, and is now incorporated into the additional AQ Thresholds.

NO_2 annual arithmetic mean	0.030 ppm (state) and 0.0534 ppm (federal)
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal)
CO 1-hour average CO 8-hour average	9.0 ppm (state/federal)
PM_{10} 24-hour average	10.4 µg/m^3 (construction)[4] 2.5 µg/m^3 (operation)
PM_{10} annual average	1.0 µg/m^3
$PM_{2.5}$ 24-hour average	10.4 µg/m^3 (construction)[4] 2.5 µg/m^3 (operation)

Source: Appendix B.
Notes: Refer to Table 5.2-2 for state and federal attainment/non-attainment status of criteria pollutants of concern
SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter.
GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not include included in Table 5 as they are addressed within the GHG emissions analysis and not the air quality study.
[1] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[2] TACs include carcinogens and noncarcinogens.
[3] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[4] Ambient air quality thresholds are based on SCAQMD Rule 403.

Consistency with the Air Quality Management Plan

The evaluation of whether the project would conflict with or obstruct implementation of the applicable air quality plan (Impact AQ-1) is based on the SCAQMD CEQA Air Quality Handbook (Dudek 2019), Chapter 12, Sections 12.2 and 12.3. The first criterion assesses if the project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP. The second criterion is if the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Regional Air Quality Impacts

To evaluate the potential for the project to violate any air quality standard or contribute substantially to an existing or projected air quality violation, this analysis applies the SCAQMD's construction and operational criteria pollutants mass daily thresholds, as shown in Table 5.2-4. A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO_X thresholds shown in Table 5.2-4. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (VOC and NO_X) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

Localized Significance Thresholds

The assessment of the project's potential to expose sensitive receptors to substantial pollutant concentrations includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the

potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the project. For project sites of 5 acres or less, the SCAQMD LST Methodology (2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling. Although the proposed development area of the site is greater than 5 acres (approximately 5.71 acres), the project would disturb less than 5 acres in one day, as discussed in detail in the following text, so it is appropriate to use the lookup tables for the LST evaluation.

The screening-level LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the screening-level threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The screening-level LST significance threshold for $PM_{2.5}$ is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source-receptor area (SRA) in which the project is located
- Size of the project site
- Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The project site is in SRA 3 (Southwest Coastal Los Angeles County). The SCAQMD provides guidance for applying California Emissions Estimator Model (CalEEMod) to the screening-level LSTs. The screening-level LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. The maximum number of acres disturbed on the peak day was estimated using the "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (SCAQMD 2011), which provides estimated acres per 8-hour day for crawler tractors, graders, rubber-tired dozers, and scrapers. Based on the SCAQMD guidance, and assuming an excavator can grade 0.5 acres per 8-hour day (similar to graders, dozers, and tractors), it was estimated that the maximum daily area on the project site that would be disturbed by off-road equipment would be 1 acre per day (two excavators operating during the grading phase). Because the total disturbed acreage would be 5.71 acres over approximately 87 days (5 days/week for 4.5 months), the estimate of 1 acre per day of disturbance is conservative. Because the SCAQMD does not provide lookup table values for sites less than 1 acre, the LST values for 1 acre within SRA 3 were used.

The nearest sensitive-receptor land use (a residence) is approximately 77 feet north of the project's limits of construction. The distance of sensitive receptors to the project site is therefore within the SCAQMD specified thresholds for the first 25-meter increment of LST modeling. As such, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. The screening-level LST values from the SCAQMD lookup tables for SRA 3 (Southwest Coastal Los Angeles County) for a 1- acre project site and a receptor distance of 25 meters (82 feet) are shown in Table 5.2-5, *Screening-Level Localized Significance Thresholds Analysis for Project Construction.*

Table 5.2-5 Screening-Level Localized Significance Thresholds Analysis for Project Construction

Air Pollutant	Threshold (Pounds per Day)
Nitrogen Oxides (NO_X)	91
Carbon Monoxide (CO)	664
Coarse Particulates (PM_{10})	5
Fine Particulates ($PM_{2.5}$)	3

Source: Appendix B.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
LST thresholds were determined based on the values for 1-acre site at a distance of 25 meters (82 feet) from the nearest sensitive receptor.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

The significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If ambient levels are below the standards, a project is considered to have significant impacts if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. The SCAQMD defines a measurable amount as 1.0 ppm or more for the 1-hour CO concentration or 0.45 ppm or more for the 8-hour CO concentration.

Health Risk

The construction HRA applies the SCAQMD risk thresholds for TACS presented in Table 5.2-4, which are a maximum incremental cancer risk greater than or equal to 10 in 1 million and a chronic hazard index greater than or equal to 1.0 (project increment).

Odors

The potential for the project to result in an odor impact is based on the project's land use type and anticipated construction activity, and the potential for the project to create an odor nuisance pursuant to SCAQMD Rule 402.

5.2.3 Environmental Impacts

5.2.3.1 APPROACH AND METHODOLOGY

Construction Emissions

Emissions from the construction phase of the project were estimated using CalEEMod Version 2016.3.2. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant and CalEEMod default values when project specifics were not known.

For purposes of estimating project emissions, and based on information provided by the project applicant, a base year of 2017 and a construction duration of 29 months was assumed in the analysis.[7] The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Grading: 4 months
- Building Construction, Parking Garage: 7 months
- Paving: 2 months
- Building Construction, Residential (above parking): 18 months
- Application of Architectural Coatings: 3 months

The 4-month grading phase will include site grading, remediation, temporary shoring, and installation of utilities. The temporary shoring would be approximately 125 feet long.

Both the parking garage and the residential development would be painted during the three-month architectural coating phase. The residential building construction phase and the architectural coating phase end during the same month because the residential building construction phase duration includes finalization of the project construction and exterior improvements as well as demobilization.

Construction-worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. Haul truck trips during the grading phase were based on project applicant–provided earthwork quantities. Grading is currently estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. Assuming a haul truck capacity of 16 CY per truck, earth-moving activities would result in approximately 7,455 round trips (14,910 one-way truck trips) during the grading phase. CalEEMod default trip length values were used for the distances for all construction-related trips. Fugitive dust generated during truck loading is included in CalEEMod as an on-site source of fugitive dust emissions and is calculated based on estimated throughput of loaded and unloaded material (i.e., 119,270 CY of soil export).

It should be noted that in consultation with the City of Torrance, the applicant included an assessment of being required to excavate soils beyond the estimated 120,915 cubic yards due to the potential to encounter contaminated soils. Notably, the air quality technical report states that the applicant would work with the

[7]Construction emissions based on earlier years are higher compared to emissions based on later years. This is due to the assumption that with each passing year, older more polluting equipment are replaced by newer, cleaner, less polluting equipment based on compliance with EPA's non-road diesel engine requirements. Therefore, the construction emissions inventory is a conservative estimate.

Department of Toxic Substances Control, per the City's request, and would comply with the provisions of the pending land use covenant, which does not envision environmental remediation of on-site soils. As such, the additional 10 percent excavation buffer (which would equate to 11,927 CY) specified in the Geocon letter regarding "Suggested Contingency Factor for Estimation of Soil Excavation during Grading" (Geocon 2018b) would be balanced on site and would not be exported off site. In addition, a 4-foot layer of clean fill will be placed across the entire Lot 1 to address potential hazardous material concerns. It is anticipated that this fill material will consist of the competent native materials excavated to obtain the above-referenced pad elevations associated with the development. In order to estimate fugitive dust from excavation and movement of the additional 11,927 CY of soil, fugitive dust (PM_{10} and $PM_{2.5}$) was calculated using a spreadsheet model based on the CalEEMod equations for on-site material handling.

The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions, which were provided by the applicant, are shown in Table 5.2-6, *Construction Scenario Assumptions*. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week, 8 hours per day (22 days per month) during project construction.

Table 5.2-6 Construction Scenario Assumptions

	One-Way Vehicle Trips			Equipment		
Construction Phase	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Grading	24	0	14,910	Excavators	2	8
				Rubber-tired loaders	1	8
Building construction – parking garage	100	40	0	Tractors/loaders/ backhoes	2	8
Paving	8	2	0	Pavers	1	8
				Paving equipment	1	8
				Rollers	1	8
Building construction – residential (above garage)	182	30	0	Cranes	1	6
				Forklifts	2	8
				Welders	1	4
Architectural Coating	56	2	0	—	—	—

Source: Appendix B.
Notes: n/a = not applicable
[1] Based on information provided by the applicant.

The project would implement dust control strategies as a project design feature (see Appendix B for further details). To reflect implementation of proposed dust control strategies, the following was assumed in CalEEMod:

- Water exposed area three times per day (61 percent reduction in PM_{10} and $PM_{2.5}$).
- As a surrogate for watering unpaved road three times per day, the "soil stabilizer for unpaved" option was used assuming a 61 percent reduction in PM_{10} and $PM_{2.5}$.
- Limit vehicle travel on unpaved roads to 15 mph.

Operation Emissions

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2019 was assumed consistent with the traffic impact study (TIS) prepared for the project.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are calculated in the building energy use module of CalEEMod, as described in the following text. The project would not include woodstoves or fireplaces (wood or natural gas). As such, area source emissions associated with hearths were not included.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of residential and nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For parking lot land uses, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of residential and nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SCAQMD's Rule 1113 (Architectural Coatings) governs the VOC content for interior and exterior coatings. The model default reapplication rate of 10 percent of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75 percent assumed for interior coating and 25 percent assumed for exterior surface coating. For nonresidential land uses (e.g., community and fitness rooms), it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75 percent assumed for interior coating and 25 percent assumed for exterior surface coating. For the parking garage, the architectural coating area is assumed to be 6 percent of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per residential dwelling unit per day and grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. For Los Angeles County, the average annual "summer" days are estimated to 365 days; however, it is assumed that landscaping equipment would likely only operate during the week (not weekends), so operational days were assumed to be 250 days per year in CalEEMod (CAPCOA 2017). By design, the project would not include turf,

and the proposed landscaped area would be minimal(approximately 96,385 square feet of landscaping in the 5.71-acre development area). Based on information provided by the applicant, it is assumed that any landscape equipment used would be powered by electricity, when needed. Nonetheless, emissions associated with potential landscape maintenance equipment were included, and no emission reduction features related to electric landscape equipment were assumed in order to conservatively capture potential project operational emission sources.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off-site.

The energy use from residential land uses is calculated in CalEEMod based on the Residential Appliance Saturation Study. For nonresidential buildings, CalEEMod energy intensity values (natural gas usage per square foot per year) assumptions were based on the California Commercial End-Use Survey database. CalEEMod default values for energy consumption were applied for the project analysis and were adjusted to assume regulatory compliance with the 2016 CALGreen Tier 1 standards. Per the 2016 CALGreen Tier 1 standards (24 CCR, Part 11), which would be required by the City, the project would be required to demonstrate that buildings exceed Title 24, Part 6, of the California Code of Regulations energy efficiency standards by 15 percent.

Mobile Sources

Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on the TIS prepared for the project by KHR Associates, the proposed residential development is anticipated to generate 5.44trips per dwelling unit (KHR Associates 2019), which was assumed for the weekday trip rate.[8] Accordingly, the 248 dwelling units would generate approximately 1,649 trips per day during the week. Because the default CalEEMod weekday trip rate for mid-rise apartments is the same as the assumed project trip rate, the default CalEEMod weekday trip rates were used, and no adjustments were necessary. CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were used for the model inputs to estimate daily emissions from proposed vehicular sources. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2019 were used to estimate emissions associated with full buildout of the project.

The California Air Pollution Control Officers Association has developed methodologies for quantifying the GHG emission reductions associated with numerous mitigation measures (CAPCOA 2010). Several of the measures would also reduce air pollutant emissions related to land use and transportation planning, including to reduce vehicle trips and/or trip lengths, enhance walking and bicycles as alternative modes of transportation, enhance availability of transit, and incorporate other approaches. In regard to mobile source emission reduction

[8] The TIS used the trip rates provided in the Institute of Transportation Engineers Trip Generation Manual, 9th Edition (ITE 2012), for the mid-rise apartment land use category.

features relating to land use, it was assumed that the project would involve an increase in typical density and an improvement in accessibility to job centers. The project's density of 10 dwelling units per acre is greater than the assumed blended average density of residential development of 7.6 dwelling units per acre (CAPCOA 2010). The project's density within the 5.71-acre Lot 1, which is the only lot in which project related development would occur, is approximately 43.4 dwelling units per acre. Accordingly, assuming a project density of 10 dwelling units per acre instead of 43.4 dwelling units per acre is conservative.

Job opportunities are located within one to five miles of the project site, and it was assumed in CalEEMod that job centers are located within five miles of the project site, which is less than the assumed average work trip length of twelve miles (CAPCOA 2010). The location of job opportunities near the project site would result in a reduction in home-to-work trip lengths for residents that work nearby. The reduction in overall commute vehicle miles traveled would result in an associated reduction in mobile source emissions. The City is home to nearly 400 headquarter businesses, which offer various employment opportunities to Torrance residents (Torrance Office of Economic Development 2017a). The City's Office of Economic Development identified the top 12 Torrance employers, 9 of which are within five miles or less of the project site (approximate trip distance from the project site provided in parenthesis): American Honda Motor Co. Inc. (5 miles), Robinson Helicopter Company (1 mile), Hi-Shear Corporation (2 miles), Alcoa Fastening Systems (2 miles), Torrance Refining Company/ Formerly Exxon Mobil Oil Corporation (5 miles), Pelican Productions Inc. (2 miles), Macy's Department Store (2.5 miles), L-3 Communications Electron (2 miles), and Saatchi & Saatchi (2 miles) (Torrance Office of Economic Development 2017b). Another of the top 12 employers, Honeywell Aerospace, is less than 7 miles from the project site (Torrance Office of Economic Development 2017b). In addition, there are multiple retail centers located near the project, including the Del Amo Fashion Center within 2.5 miles and a strip mall 0.5 mile north.

In regard to neighborhood enhancements, the project would improve the pedestrian network on the project site and connecting off-site, which results in minor reductions to motor vehicle emissions. Pedestrian network improvements include providing access and links to pedestrian facilities contiguous with the project site and minimizing barriers to pedestrian access and interconnectivity, which would encourage pedestrian travel. The City's Hawthorne Boulevard Corridor Specific Plan, which covers the area north of the project site along Hawthorne Boulevard, promotes a walkable commercial corridor of neighborhood-serving retail uses, office, and restaurants (Torrance 1996). Project residents would have access to the walkable Hawthorne Boulevard corridor and adjacent retail and commercial uses. Pedestrian network improvements on-site and connections to off-site facilities would result in a minor reduction in vehicle miles traveled and an associated reduction in mobile source emissions by shifting travel from motor vehicles to pedestrian or bicycle travel (CAPCOA 2010).

The project design would include pedestrian/bicycle safety and traffic calming measures in excess of City requirements. Internal roadways would be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic-calming features and thereby would reduce vehicle miles traveled.[9] All of the on-site project intersections would have marked crosswalks, and approximately 50 percent of intersections would

[9] Per the CAPCOA report, "Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures" (CAPCOA 2010), types of traffic-calming features include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

have raised medians (Dudek 2019). Approximately 25 percent of internal streets would provide on-street parking and approximately 10 percent would have raised medians with landscaping (Dudek 2019). In addition, a raised median would be provided at 50 percent of the project access points, and an off-site deceleration lane for slowing entrance traffic to the site from Hawthorne Boulevard is included in the project design. Based on these considerations, it was conservatively assumed in CalEEMod that 25 percent of intersections and 25 percent of streets would include traffic-calming measures.

Carbon Monoxide Hotspots

Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and the SoCAB. Locally, project generated traffic would be added to the City's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and is operating on roadways already crowded with other traffic, there is a potential for the formation of CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SoCAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The potential for CO hotspots is evaluated based on the results of the TIS (KHR Associates 2019), and the California Department of Transportation (Caltrans) Institute of Transportation Studies Transportation Project-Level Carbon Monoxide Protocol (CO Protocol; 1997) was followed. For projects within an area designated as attainment or unclassified under the CAAQS or NAAQS, the CO Protocol identifies screening criteria for consideration. The first screening criteria focuses on projects that are likely to worsen air quality, which would occur if (1) the project significantly increases the percentage of vehicles operating in cold start mode (greater than 2 percent), (2) the project significantly increases traffic volumes (greater than 5 percent), and/or (3) the project worsens traffic flow. In addition to consideration of whether the project would worsen air quality, CO hotspots are typically evaluated when (1) the level of service (LOS) of an intersection or roadway worsens to LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

Construction Health Risk Assessment

An HRA was performed to evaluate potential health risk associated with construction of the project. The following discussion summarizes the dispersion modeling and HRA methodology; supporting construction HRA documentation, including detailed assumptions, is presented in Appendix B.

For risk assessment purposes, PM_{10} in diesel exhaust is considered DPM, originating mainly from off-road equipment operating at a defined location for a given length of time at a given distance from sensitive receptors. Less-intensive, more-dispersed emissions result from on road vehicle exhaust (e.g., heavy-duty diesel trucks). For the construction HRA, the CalEEMod scenario for the project was adjusted to reduce diesel truck one-way trip distances to 1,000 feet to estimate emissions from truck pass-by at proximate receptors.

Additionally, the evaluation of $PM_{2.5}$ encompassed fine dust particles, including diatomaceous soils and amorphous silica. Diatomaceous soils are primarily confined to Lot 2, the blufftop portion of the site. There would be minimal potential disturbance of this area. The site's distance to off-site receptors, the prevailing wind direction, and the fugitive dust controls required by SCAQMD Rule 403 during project construction would substantially reduce any exposure to sensitive receptors from diatomaceous soils and amorphous silica exposure.

The air dispersion modeling methodology was based on generally accepted modeling practices of SCAQMD (SCAQMD 2018a). Air dispersion modeling was performed using EPA's American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) Version 16216 modeling system (computer software) with the Lakes Environmental Software implementation/user interface, AERMOD View Version 9.5.0. The HRA followed the Office of Environmental Health Hazard Assessment (OEHHA) 2015 guidelines (OEHHA 2015) and SCAQMD guidance to calculate the health risk impacts at all proximate receptors, including off-site residential receptors, the nearest school, and worker receptors, as further discussed below. The dispersion modeling included the use of standard regulatory default options. AERMOD parameters were selected consistent with the SCAQMD and EPA guidance and identified as representative of the project site and project activities. Principal parameters of this modeling are presented in Table 5.2-7, *AERMOD Principal Parameters*.

Table 5.2-7 AERMOD Principal Parameters

Parameter	Details
Meteorological data	AERMOD-specific meteorological data for the Hawthorne Airport air monitoring station (KHHR) was used for the dispersion modeling. A 5-year meteorological data set from 2012 through 2016 was obtained from the SCAQMD in a preprocessed format suitable for use in AERMOD.
Urban versus rural option	Urban dispersion option was selected due to the developed nature of the project area and per SCAQMD guidelines
Terrain characteristics	The elevation of the site is 191 feet (58.2 meters) above mean sea level.
Elevation data	Digital elevation data were imported into AERMOD and elevations were assigned to receptors and emission sources, as necessary. Digital elevation data were obtained through the AERMOD View in the United States Geological Survey's National Elevation Dataset format with a resolution of 1/3 degree (approximately 10 meters), consistent with the SCAQMD guidance (SCAQMD 2018a).
Source release characterizations	The modeled source area was approximately 6 acres. An initial lateral dimension of 1 meter and a release height of 5 meters was assumed for off-road equipment and diesel trucks.

Source: Appendix B.
Note: AERMOD = American Meteorological Society/Environmental Protection Agency Regulatory Model; SCAQMD = South Coast Air Quality Management District.

Regarding receptors, the construction scenario used a 2-kilometer by 2-kilometer (1.2 mile by 1.2 mile) Cartesian receptor grid with 100-meter (330 feet) spacing to establish the impact area and evaluate locations of maximum health risk impact. The construction scenario also used discrete receptors positioned at specific locations to evaluate the maximally exposed sensitive receptor. Discrete receptors included residences located near the project site property boundary, commercial/retail land uses to the east of the project site, and the nearest school, Walteria Elementary School, which is approximately 1,180 feet northeast of the project site.

The health risk calculations were performed using the Hotspots Analysis and Reporting Program Version 2 (HARP 2) Air Dispersion and Risk Tool (ADMRT, Version 17320). AERMOD was run with all sources emitting unit emissions (1 gram per second) to obtain the necessary input values for HARP 2. The ground-level concentration plot files were then used to estimate the long-term cancer health risk to an individual, and the noncancer chronic health indices.

Cancer risk is defined as the increase in probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased chances in one million. Maximum Individual Cancer Risk is the estimated probability of a maximally exposed individual potentially contracting cancer as a result of exposure to TACs over a period of 30 years for residential receptor locations and 25 years for off-site worker receptor locations. For the construction HRA, the TAC exposure period was assumed to be 3 years for all receptor locations (i.e., the assumed duration of project construction). While construction of the project would last approximately 2.5 years, average annual construction emissions estimated over 2.5 years were conservatively assumed to occur continuously over 3 years based on the HARP 2 input options. The exposure pathway for DPM is inhalation-only.

The SCAQMD has also established noncarcinogenic risk parameters for use in HRAs since some TACs increase non-cancer health risk due to long-term (chronic) exposures and some TACs increase non-cancer health risk due to short-term (acute) exposures. No short-term, acute relative exposure level has been established for DPM; therefore, acute impacts of DPM are not addressed in the HRA. Chronic exposure is evaluated in the construction HRA. Noncarcinogenic risks are quantified by calculating a hazard index, expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level, which is a concentration at, or below which health effects are not likely to occur. The Chronic Hazard Index is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. A hazard index less of than one means that adverse health effects are not expected.

The construction HRA calculated Residential Maximum Individual Cancer Risk, Worker Maximum Individual Cancer Risk, School Maximum Individual Cancer Risk, Residential Chronic Hazard Index, Worker Chronic Hazard Index, and School Chronic Hazard Index.

5.2.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.2-1: The proposed project is consistent with the applicable Air Quality Management Plan. [Threshold AQ-1]

As previously discussed, the project site is located within the SoCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the AQMP, currently the 2016 AQMP, in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook (Dudek 2019). The criteria are as follows:

- **Consistency Criterion No. 1:** The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.

- **Consistency Criterion No. 2:** The proposed project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1

Impact 5.2-2 of this DEIR evaluates the project's potential impacts in regard to CEQA Guidelines Appendix G Threshold 2. As discussed in impact 5.2-2, the project would not result in a significant and unavoidable impact associated with the violation of an air quality standard. Established standards and regulations are designed to conservatively prevent adverse impacts, and impacts within the specified thresholds would therefore not result in adverse consequences. Because the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the project would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SoCAB. Projects are considered consistent with and would not conflict with or obstruct implementation of the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook).

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the SCAG for its RTP/SCS (SCAG 2016), which is based on general plans for cities and counties in the SoCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).[10] The SCAG 2016 RTP/SCS and associated Regional Growth Forecast are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans. The City of Torrance General Plan (Torrance 2010) land use designation for the project development footprint is low density residential (R-LO). The project is within an area zoned as light agricultural (A-1) within the City of Torrance Property Zoning Map (Torrance 2015). The project is requesting a General Plan Amendment to low-medium density residential (R-LM). The project would not be consistent with the current zoning of the site; however, the project would preserve 18.97 acres of the 24.68-acre property as natural open space, which would not generate an increase in residential or employment population.

[10] Information necessary to produce the emission inventory for the SoCAB is obtained from the SCAQMD and other governmental agencies, including CARB, Caltrans, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socio-economic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into their Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socio- economic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

Regarding population projections, as discussed in Section 3.13 of the Initial Study (see Appendix A), since the site is currently designated low density residential (R- LO), it could have a population of 582 people based on a maximum density of 9 units per acre and the estimated average household size of 2.62 persons in the City of Torrance. At full occupancy, the project is estimated to house 722 residents. This would result in an increased population of 140 people for the project site. While the projected population growth for this property is slightly higher than projected, the population in other areas of the City has grown at a lower than expected rates, and the City's overall projections account for the additional residents. For example, the U.S. Census Bureau estimates a population of 146,758 for Torrance as of July 1, 2017, and housing units of 58,585 through 2016. These estimates fall short of the City's Housing Element Update (adopted October 2013 and good through December 2021), which projected a population of 155,464 by 2020 and equates to an increase in population of 8,706 persons over the 2017 Census estimate. Since the City has entitled approximately 325 housing units since the Housing Element Update, the City's population projections would accommodate the additional 140 persons at the project site.

Therefore, the increased population at the project site would be accommodated by the City's overall population projections in the Housing Element Update. Based on these considerations, vehicle trip generation and the increase in population/housing associated with the project are accounted for in the SCAG growth projections. Because the addition of project-generated residents to the City's estimated population would not exceed the SCAG 2016 RTP/SCS forecasted population, implementation of the project would not result in a conflict with or obstruct implementation of the applicable air quality plan (i.e., SCAQMD 2016 AQMP). Accordingly, the project would meet Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook.

Summary

As described in this section, the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations and would not conflict with Consistency Criterion No. 1. Implementation of the project would not exceed the demographic growth forecasts in the SCAG 2016 RTP/SCS; therefore, the project would also be consistent with the SCAQMD 2016 AQMP, which based future emission estimates on the SCAG 2016 RTP/SCS. Thus, the project would not conflict with Consistency Criterion No. 2. Based on these considerations, impacts related to the project's potential to conflict with or obstruct implementation of the applicable air quality plan would be less than significant.

Impact 5.2-2: Construction activities associated with the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. [Threshold AQ-2]

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, dust, and the prevailing weather conditions. Therefore, such emissions levels can only be approximately estimated, with a corresponding uncertainty in precise ambient air quality impacts.

Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction. Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the project applicant and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. There is minimal potential for native diatomaceous earth to be disturbed by project construction activities as diatomaceous earth is mainly located in Lot 2, which is comprised almost entirely of slopes and bluff-face and therefore will be largely undisturbed.

The project would implement various dust control strategies and would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities, including diatomaceous earth. Proposed construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites and unpaved roads three times per day depending on weather conditions and restricting vehicle speed on unpaved roads to 15 mph. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 5.2-8, *Estimated Maximum Daily Construction Criteria Air Pollutant Emissions*, presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum daily emissions results from CalEEMod.

Table 5.2-8 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Construction Phase	Pollutants (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 1	3.60	67.75	27.49	0.16	22.52	3.67
Year 2	2.03	12.39	14.71	0.04	13.56	2.14
Year 3	30.43	11.70	16.14	0.05	17.13	2.55
10 Percent Additional Soil Excavation[1]	—	—	—	—	0.02	0.00
Maximum Daily Emissions	30.43	67.75	27.49	0.16	22.54	3.67
SCAQMD Regional Construction Thresholds	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: Appendix B.
Notes: VOC = volatile organic compound; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod for the three years of construction. These emissions reflect CalEEMod "mitigated output", which accounts for compliance with SCAQMD Rule 1113 (Architectural Coatings) and implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads three times per day, and restricting vehicle speed on unpaved roads to 15 mph.

Table 5.2-8 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Construction Phase	Pollutants (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$

[1] In addition, in order to estimate fugitive dust from excavation and movement of the additional 10 percent soil excavation buffer (i.e., 11,927 cubic yards), fugitive dust (PM_{10} and $PM_{2.5}$) was calculated using a spreadsheet model based on the CalEEMod equations for material handling. The potential 10 percent additional soil excavation would occur during the grading phase in year 1.

Maximum daily emissions of NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions would occur during the grading phase in the first year of construction as a result of off-road equipment operation and on- road vendor trucks and haul trucks. The overlap of the building construction phase and the architectural coatings phases in the final year of construction would produce the maximum daily VOC emissions. As shown in Table 5.2-8, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ during construction in all construction years. Construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. As such, impacts would be less than significant.

Impact 5.2-3: Long-term operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. [Threshold AQ-2]

Operation of the project would generate VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from future residents; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including combustion of fuels used for space and water heating and cooking appliances. Project-generated mobile source emissions were estimated in CalEEMod based on project-specific trip rates. CalEEMod default values were used to estimate emissions from the project area and energy sources.

Table 5.2-9, *Estimated Maximum Daily Operational Criteria Air Pollutant Emissions*, presents the maximum daily area, energy, and mobile source emissions associated with operation of the project. The values shown are the maximum daily emissions results from CalEEMod.

Table 5.2-9 Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Construction Phase	Pollutants (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	6.86	0.24	20.61	0.00	0.11	0.11
Energy	0.08	0.70	0.31	0.00	0.06	0.06
Mobile	3.53	16.37	45.66	0.14	10.40	2.89
Maximum Daily Emissions	10.47	17.31	66.59	0.14	10.57	3.06
SCAQMD Regional Operational Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No

Source: Appendix B.
Notes: VOC = volatile organic compound; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
Totals may not sum due to rounding.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output and operational year 2019.

As shown in the table, the combined daily area, energy, and mobile source emissions would not exceed the SCAQMD operational thresholds for VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Impacts associated with project-generated operational criteria air pollutant emissions would be less than significant.

Impact 5.2-4: The proposed project would not expose sensitive receptors to substantial criteria air pollutant and toxic air contaminant concentrations. [Threshold AQ-3]

Localized Significance Thresholds Analysis

As discussed above, sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. Residential land uses are located to the north, east, and west of the project. The closest off-site sensitive receptors to the project site include residences located approximately 77 feet north of the project's limits of construction.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. The impacts were analyzed using methods consistent with those in SCAQMD's Final LST Methodology (2009). According to the Final LST Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Hauling of soils and construction materials associated with the project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 3 are presented in Table 5.2-10, *Maximum Daily Onsite Construction Emissions*, and compared to the maximum daily on-site construction emissions generated during the project.

Tables 5.2-10 Maximum Daily Onsite Construction Emissions

Construction Phase	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction emissions	14.02	12.07	0.85	0.78
SCAQMD Screening-Level LSTs	91	664	5	3
LST exceeded?	No	No	No	No

Source: Appendix B.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District; LST = localized significance threshold.
See Appendix A for complete results.
Localized significance thresholds are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters.
These estimates implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads three times per day, and restricting vehicle speed on unpaved roads to 15 mph.
Greatest on-site NO_2, CO, PM_{10}, and $PM_{2.5}$ emissions are associated with the overlap between the parking garage building construction phase and paving phase in the first year of construction.

As shown Table 5.2-10, construction activities would not generate emissions in excess of site-specific screening-level LSTs; therefore, site-specific construction impacts during construction of the project would be less than

significant. In addition, diesel equipment would also be subject to the CARB air toxic control measures for in-use off-road diesel fleets, which would further minimize DPM emissions from those shown in Table 5.2-10.

Dust Exposure

Based on a site-specific investigation performed by Geocon West, diatomaceous soils are primarily confined to Lot 2, with several minimal areas in Lot 1 where it abuts Lot 2 (Dudek 2019). In summary, the only localized area on Lot 1 (southwest corner of the proposed parking structure) where 3 to 6 feet of slough would be disturbed (excavated) as part of the grading operations would be located a substantial distance of about 512 feet from the nearest off-site receptor at 4464 Via Pinzon. The nearest receptor is also upwind of the project site, which means that the prevailing winds would typically blow potential emissions away from the residence and back toward the project site. Overall, based on the minimal potential disturbance of slough material described in the geotechnical report, as well as the distance to off-site receptors, the prevailing wind direction, and the extensive fugitive dust controls to be implemented during project construction, project construction activities would not result in the exposure of sensitive receptors to substantial concentrations of diatomaceous soils or amorphous silica.

CO Hotspots

A screening evaluation of the potential for CO hotspots was conducted based on the TIS (KHR Associates 2019) results and the Caltrans Transportation Project-Level Carbon Monoxide Protocol (CO Protocol; 1997).

The proposed project's TIS evaluated 18 intersections. As determined by the TIS using data from the City of Torrance Public Works Department, Traffic Engineering Division, the following intersections under the Cumulative Year (2019) operate at LOS E or worse during the AM or PM peak hours:

- Hawthorne Boulevard/Pacific Coast Highway (LOS E in AM and LOS F in PM)
- Crenshaw Boulevard/Rolling Hills Road (LOS F in AM)
- Crenshaw Boulevard/Pacific Coast Highway (LOS E in AM and PM)
- Hawthorne Boulevard/Palos Verdes Drive North (LOS E in AM)
- Crenshaw Boulevard/Palos Verdes Drive North (LOS F in AM and PM)
- Rolling Hills Road/Palos Verdes Drive North (LOS F in AM and PM)
- Pacific Coast Highway/Calle Mayor (LOS F in AM and PM)

For each scenario (existing with project; existing with ambient growth and the proposed project; existing with ambient growth, cumulative projects, and the proposed project), the screening evaluation presents LOS with project improvements (mitigation), whether the recommended improvements (mitigation measures) are feasible, and whether a quantitative CO hotspots analysis may be required. According to Caltrans CO Protocol, there is a cap on the number of intersections that need to be analyzed for any one project. For a single project with multiple intersections, only the three intersections representing the worst LOS ratings of the project, and, to the extent they are different intersections, the three intersections representing the highest traffic volumes, need be analyzed. For each intersection failing a screening test as described in this protocol, an additional intersection should be analyzed (Caltrans 1997).

Based on the CO hotspot screening evaluation, the intersections that exceeded the CO hotspot screening criteria shown above all have different geometries and are signalized. Therefore, all intersections that exceeded the CO hotspot screening criteria were evaluated. The potential impact of the project on local CO levels was assessed at these intersections with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections (Caltrans 1998a).

The emissions factor represents the weighted average emissions rate of the local SoCAB vehicle fleet expressed in grams per mile per vehicle. Consistent with the TIS, emissions factors for 2019 were used for the analysis. Emissions factors for 2019 were predicted by EMFAC2014 based on a 5-mph average speed for all of the intersections for approach and departure segments. The hourly traffic volume anticipated to travel on each link, in units of vehicles per hour, was based on the TIS.

Four receptor locations at each intersection were modeled to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersections, for a total of four receptors adjacent to the intersection, to represent the future possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2019. A receptor height of 5.9 feet (1.8 meters) was used in accordance with Caltrans recommendations for all receptor locations (Caltrans 1998b).

The SCAQMD provides projected future concentrations of CO emissions in order to assist the CEQA practitioner with a CO Hotspots Analysis. The projected future 1-hour CO background concentration of 5.1 parts per million for 2020 for the Long Beach Webster monitoring station was assumed in the CALINE4 model for 2019 (SCAQMD 2018b). The maximum CO concentration measured at the Long Beach Webster monitoring station over the last 3 years was 3.7 parts per million, which was measured in 2014; as such, the SCAQMD projected 1-hour CO ambient concentration of 5.1 parts per million is a conservative assumption. The 8-hour average CO concentration was added to the SCAQMD projected 8-hour CO ambient concentration of 3.9 parts per million for 2020 from the Long Beach Webster monitoring station to compare to the CAAQS (SCAQMD 2018b). The CALINE4 predicted CO concentrations are shown in Table 5.2-11, *CALINE Predicted Carbon Monoxide Concentrations*.

Table 5.2-11 CALINE Predicted Carbon Monoxide Concentrations

Construction Phase	Maximum Modeled Carbon Monoxide Impact (ppm)	
	1-hour	8-hour
Hawthorne Boulevard/Pacific Coast Highway	6.0	4.53
Crenshaw Boulevard/Rolling Hills Road	5.7	4.32
Crenshaw Boulevard/Pacific Coast Highway	6.1	4.60
Hawthorne Boulevard/Palos Verdes Drive North	5.7	4.32
Crenshaw Boulevard/Palos Verdes Drive North	5.8	4.39
Rolling Hills Road/Palos Verdes Drive North	5.6	4.25
Pacific Coast Highway/Calle Mayor	5.7	4.32
Threshold (ppm)	**20**	**9.0**
Exceeded	**N**	**N**

Source: Appendix B.

Table 5.2-11 CALINE Predicted Carbon Monoxide Concentrations

Construction Phase	Maximum Modeled Carbon Monoxide Impact (ppm)	
	1-hour	8-hour

Notes: ppm = parts per million by volume.

As shown in the table, the maximum CO concentration predicted for the 1-hour averaging period at the studied intersections would be 6.1 ppm, which is below the 1-hour CO CAAQS of 20 ppm (CARB 2016c). The maximum predicted 8-hour CO concentration of 4.60 ppm at the studied intersections would be below the 8-hour CO CAAQS of 9.0 ppm (CARB 2016c). Neither the 1-hour nor the 8-hour CAAQS would be equaled or exceeded at any of the intersections studied. Accordingly, the project would not cause or contribute to violations of the CAAQS, and would not result in exposure of sensitive receptors to localized high concentrations of CO. As such, impacts would be less than significant to sensitive receptors with regard to potential CO hotspots resulting from project contribution to cumulative traffic-related air quality impacts.

Health Impacts of Toxic Air Contaminants

Construction Health Risk

As discussed in Section 5.2-25, an HRA was performed to estimate the Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors, off-site worker receptors, and the nearest school as a result of project construction. Results of the construction HRA are presented in Table 5.2-12, *Construction Health Risk Assessment Results*.

Table 5.2-12 Construction Health Risk Assessment Results

Construction Phase	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk—Residential	Per million	4.5300	10	Less than significant
Maximum Individual Cancer Risk—Worker	Per million	0.1500	10	Less than significant
Maximum Individual Cancer Risk— Walteria Elementary School	Per million	0.1200	10	Less than significant
Chronic Hazard Index—Residential	Index value	0.0020	1.0	Less than significant
Chronic Hazard Index—Worker	Index value	0.0040	1.0	Less than significant
Chronic Hazard Index— Walteria Elementary School	Index value	0.0003	1.0	Less than significant

Source: Appendix B.

As shown in Table 5.2-12, project construction activities would result in a Residential Maximum Individual Cancer Risk of 4.53 in 1 million, a Worker Maximum Individual Cancer Risk of 0.15 in 1 million, and a School Maximum Individual Cancer Risk of 0.12 in 1 million, which are all below the significance threshold of 10 in 1 million. Project construction would also result in a Residential Chronic Hazard Index of 0.002, a Worker Chronic Hazard Index of 0.0040, and a School Chronic Hazard Index of 0.0003, which are well below the 1.0 significance threshold. The project construction TAC health risk impacts would be less than significant.

Operational Health Risk

There is an existing gasoline dispensing facility located approximately 250 feet from the northern project property line and approximately within 315 feet from the nearest residential building. The CARB Air Quality and Land Use Handbook: A Community Health Perspective (2005) recommends avoiding siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), and a 50-foot separation is recommended for typical gas dispensing facilities. Based on aerial imagery (Google Earth 2016), the existing Chevron gasoline station has four pump islands (eight fuel pumps), which is not considered to be a large gasoline dispensing facility. As such, project sensitive receptors (i.e., future residents) would not be located within the recommended siting distance of 50 feet for a typical gas station.

No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Thus, the project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant.

Health Impacts of Other Criteria Air Pollutants

Construction and operation of the project would not result in emissions that would exceed the SCAQMD thresholds for any criteria air pollutants including VOC, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$, thereby protecting the health of nearby and onsite sensitive receptors. VOCs would be associated with motor vehicles, construction equipment, and architectural coatings; however, project-generated VOC emissions would not result in the exceedances of the SCAQMD thresholds as shown in Table 5.2-4. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, SCAQMD Rule 1113 restricts the VOC content of coatings for both construction and operational applications.

VOCs and NOx are precursors to O_3, for which the SoCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_X to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SoCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Nonetheless, the VOC and NO_X emissions associated with project construction and operation could minimally contribute to regional O_3 concentrations and the associated health impacts. Because of the minimal contribution during construction and operation, health impacts would be considered less than significant.

Construction and operation of the project would also not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter nor obstruct the SoCAB from coming into attainment for these pollutants. The project would also not result in substantial DPM emissions during construction and operation, and therefore would not result in significant health effects related to DPM

exposure. Additionally, the project would implement dust control strategies and be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, health impacts would be considered less than significant.

Construction and operation of the project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. Health impacts that result from NO_2 and NO_X include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, project construction would be relatively short term, and off- road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Construction and operation of the project would not require use of any stationary sources (e.g., diesel generators, boilers) that would create substantial, localized NO_X impacts. Therefore, potential health impacts associated with NO_2 and NO_X would be considered less than significant.

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots were discussed previously and are determined to be a less-than-significant impact. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant. In summary, construction and operation of the project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health impacts associated with criteria air pollutants would be less than significant.

Impact 5.2-5: The proposed project would not create objectionable odors. [Threshold AQ-4]

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress among the public, and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Construction operations would be limited to the allowed 8 hours/day, five days a week, ongoing for 29 months. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (Dudek 2019). The project entails operation of a residential development and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is less than significant.

5.2.4 Cumulative Impacts

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. The SCAQMD develops and implements plans for future attainment of ambient air quality standards taking into account past and anticipated future projects. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

In considering cumulative impacts from the project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SoCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SoCAB. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

The SoCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SoCAB including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate VOC and NO_X emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Tables 5.2-8 and 5.2-9, project-generated construction and operational emissions, respectively, would not exceed the SCAQMD emission-based significance thresholds for VOC, NO_X, PM_{10}, or $PM_{2.5}$. As discussed in Impact 5.2-1, the project would not conflict with the SCAQMD 2016 AQMP.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. The following cumulative projects, as presented in the TIS prepared for the project (KHR Associates 2019), were considered to investigate the cumulative impacts of surrounding project development occurring in proximity to the proposed project:

1. 3210 Sepulveda Boulevard, Torrance: 130-bed assisted living facility
2. Del Amo Senior Village, Torrance: 360-dwelling-unit independent living/assisted living/hotel
3. 21515 Hawthorne Boulevard, Torrance: commercial, 45,000-square-foot health club and 12,000-square-foot gym/restaurant
4. 23104 Hawthorne Boulevard, Torrance: 10,023-square-foot daycare for children
5. 23550 Hawthorne Boulevard, Torrance: 1,500-square-foot restaurant and 2,000-square- foot bank
6. 24000 Garnier Street, Torrance: 36,866-square-foot medical office
7. 2640 Lomita Boulevard, Torrance: commercial, 161,500-square-foot Costco with car wash and gas, which will replace previous 148,000-square-foot Costco and 75,000-square-foot medical office
8. 24444 Hawthorne Boulevard, Torrance: 2,700-square-foot office and 8-dwelling-unit residential
9. 5601 Crestridge Road, Rancho Palos Verdes (Crestridge Senior Condominium Project): 60 condominiums

10. 927 Deep Valley Drive, Rolling Hills Estates: 75 condominiums and 2,000 square feet of commercial, which will replace medical, office, and retail use
11. Peninsula Center, Rolling Hills Estates: 16,000 square feet of commercial
12. 627 Deep Valley Drive, Rolling Hills Estates: 58 condominiums and 5,810 square feet of commercial
13. 250th and Narbonne, Lomita: 20 condominiums, 2,035 square feet of commercial, and 4,281 square feet of industrial
14. 24516 Narbonne Avenue, Lomita: 22 townhomes and 700 square feet of retail
15. 25114 Narbonne Avenue, Lomita: 11 townhomes and 3,500 square feet of retail
16. 1730–1734 Pacific Coast Highway, Lomita: 850 square feet of commercial and 180 square feet of retail
17. 24601 Hawthorne Boulevard, Torrance: 11 dwelling units and 2,525-square-foot commercial office space

Notably, the construction schedules for the cumulative projects listed above are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.[11] However, for disclosure, localized emissions of the nearest project (#17 in the list above, the mixed-use development at 24601 Hawthorne Boulevard/northwest corner of Hawthorne/Via Valmonte intersection) was considered in conjunction with the proposed project and the SCAQMD screening-level LSTs to gauge whether there is a possibility of potential localized impacts if construction of the projects were to overlap. The localized emissions associated with construction of the proposed project are discussed in detail in Impact 5.2-4, and the localized emissions of the nearest off-site project are detailed in the Air Quality and Greenhouse Gas Emissions technical memorandum for the 24601 Hawthorne Boulevard Mixed Use Development Project (LSA). In summary, the proposed project and the nearest off-site project would individually result in localized emissions substantially below the SCAQMD screening-level LSTs, and if the maximum emissions would occur concurrently, would not result in potentially significant localized emissions. Additionally, criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. The Health Risk Assessment conducted for the proposed project found there would be no significant impact. In the unlikely event that projects in local proximity were to be constructed at the same time and of similar intensity of the proposed project, the combined less than significant impacts from each project would not create a significant impact, and any additional project development would incorporate SCAQMD thresholds to comply with all standards and regulations.

Based on the previous considerations, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be less than significant.

[11] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

5.2.5 Existing Regulations and Standard Conditions

This analysis assumes compliance with all applicable laws as follows.

State

- Clean Car Standards – Pavley (AB 1493)
- California Advanced Clean Cars CARB (Title 13 CCR)
- Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Statewide Retail Provider Emissions Performance Standards (SB 1368).
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

SCAQMD

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 445: Wood-Burning Devices
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1186: Street Sweeping
- SCAQMD Rule 1401: New Source Review of Toxic Air Contaminants
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, these impacts would be less than significant: 5.2-1, 5.2-2, 5.2-3, 5.2-4, and 5.2-5.

5.2.7 Mitigation Measures

No mitigation measures are required.

5.2.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.2.9 References

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5. Environmental Analysis
AIR QUALITY

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5.3 BIOLOGICAL RESOURCES

The analysis in this section is based in part on the following technical report(s):

- *Biological Resources Technical Report for the Solana Torrance Project, City of Torrance, California*, Dudek, June 2017

A complete copy of the Biological Resources Technical Report (biological report or study) is included in the technical appendices to this DEIR (Appendix C).

5.3.1 Environmental Setting

5.3.1.1 APPLICABLE PLANS AND REGULATIONS

Federal, state, and local laws, regulations, plans, or guidelines that are related to protection and preservation of biological resources and applicable to the proposed project are summarized below.

Federal and State Regulations

Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, protects and conserves any species of plant or animal that is endangered or threatened with extinction, as well as the habitats where these species are found. "Take" of endangered species is prohibited under Section 9 of the FESA. "Take" means to "harass, harm, pursue, hunt, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Section 7 of the FESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on proposed federal actions that may affect any endangered, threatened, or proposed (for listing) species or critical habitat that may support the species. Section 4(a) of the FESA requires that critical habitat be designated by the USFWS "to the maximum extent prudent and determinable, at the time a species is determined to be endangered or threatened." This provides guidance for planners/managers and biologists by indicating locations of suitable habitat and where preservation of a particular species has high priority. Section 10 of the FESA provides the regulatory mechanism for incidental take of a listed species by private interests and nonfederal government agencies during lawful activities. Habitat conservation plans (HCPs) for the impacted species must be developed in support of incidental take permits to minimize impacts to the species and formulate viable mitigation measures.

Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act of 1918 (MBTA) affirms and implements the United States' commitment to four international conventions—with Great Britain, Japan, Mexico, and Russia—to protect shared migratory bird resources. The MBTA governs the take, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. It prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these items, except under a valid permit or as permitted in the implementing regulations. USFWS administers permits to take migratory birds in accordance with the MBTA.

Clean Water Act, Section 404

The United States Army Corps of Engineers (Corps) regulates discharge of dredged or fill material into "waters of the United States."[1] Any filling or dredging within waters of the United States requires a permit, which entails assessment of potential adverse impacts to Corps wetlands and jurisdictional waters and any mitigation measures that the Corps requires. Section 7 consultation with USFWS may be required for impacts to a federally listed species. If cultural resources may be present, Section 106 review may also be required. When a Section 404 permit is required, a Section 401 Water Quality Certification is also required from the Regional Water Quality Control Board (RWQCB).

Clean Water Act, Section 401and 402

Section 401(a)(1) of the Clean Water Act (CWA) specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters shall provide the federal permitting agency with a certification, issued by the state in which the discharge originates, that any such discharge will comply with the applicable provisions of the CWA. In California, the applicable RWQCB must certify that the project will comply with water quality standards. Permits requiring Section 401 certification include Corps Section 404 permits and National Pollutant Discharge Elimination System (NPDES) permits issued by the Environmental Protection Agency (EPA) under Section 402 of the CWA. NPDES permits are issued by the applicable RWQCB. The City of Torrance is in the jurisdiction of the Los Angeles RWQCB (Region 8).

California Fish and Game Code, Section 1600

Section 1600 of the California Fish and Game Code requires a project proponent to notify the California Department of Fish and Wildlife (CDFW) of any proposed alteration of streambeds, rivers, and lakes. The intent is to protect habitats that are important to fish and wildlife. CDFW may review and place conditions on the project, as part of a Streambed Alteration Agreement, that address potentially significant adverse impacts within CDFW's jurisdictional limits.

California Fish and Game Code, Sections 3503 et seq.

California Fish and Game Code Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by this code or any pursuant regulation.

Section 3503.5. prohibits the take, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or the nest or eggs of any such bird except as otherwise provided by this code or any pursuant regulation.

1 "Waters of the United States," as applied to the jurisdictional limits of the Corps under the Clean Water Act, includes all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the tide; all interstate waters, including interstate wetlands; and all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds whose use, degradation, or destruction could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; and wetlands adjacent to waters. The terminology used by Section 404 of the Clean Water Act includes "navigable waters," which is defined at Section 502(7) of the act as "waters of the United States, including the territorial seas."

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the CDFW. Its intent is to prohibit take and protect state-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, CESA also applies the take prohibitions to species petitioned for listing (state candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species. Under certain conditions, CESA has provisions for take through a 2081 permit or memorandum of understanding. In addition, some sensitive mammals and birds are protected by the state as "fully protected species." California "species of special concern" are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFW's California Natural Diversity Database, which maintains a record of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biological resources assessments.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900 et seq.) prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the Act, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to California Environmental Quality Act (CEQA). In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA; however, impacts to endangered, rare, or threatened species, including plants, are evaluated under CEQA.

Existing Conservation Plans and Areas

Coastal California Gnatcatcher Critical Habitat

Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. Federal agencies are required to consult with USFWS on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat.

The coastal California gnatcatcher (*Polioptila californica californica*) is federally listed as threatened and as a California species of special concern that typically appears in or near coastal sage scrub habitat. The species was listed as threatened in 1993. Final designation of critical habitat for the gnatcatcher was issued in October 2000 (Department of the Interior 2000). About 513,560 acres in Los Angeles, Orange, San Diego, San Bernardino, and Riverside counties are designated critical habitat for the species. Portions of the City are in Critical Habitat Unit 8 (Palos Verdes Peninsula subregion), which covers roughly 4,462 acres in the Palos Verdes Hills in southwest Los Angeles County. The proposed project site, including the development area, is in the designated critical habitat area. For the purpose of this DEIR, the biological resources technical report surveyed

the project site and a 500-foot buffer (together known as the study area) to evaluate the presence and potential for special-status biological resources to occur within the study area (see Figure 5.3-1, *Vegetation Communities and Land Covers Map*).

5.3.1.2 PLANT COMMUNITIES/HABITAT

Vegetation Communities and Land Covers

The biological report for the project site identified five vegetation communities and three nonnative land covers. Vegetation communities and land covers are described below and mapped on Figure 5.3-1.

Toyon Chaparral

In the toyon chaparral alliance, toyon (*Heteromeles arbutifolia*) either dominates or is co-dominant with other coastal sage or chaparral shrubs. The toyon chaparral within the project site is located in a very steep section of the north-facing slope within the northern portion of the site. This vegetation community is dominated by toyon, but is also accompanied by coastal sagebrush (*Artemisia californica*), ripgut brome (*Bromus diandrus*), and Sydney golden wattle (*Acacia longifolia*). The toyon chaparral alliance is considered a sensitive vegetation community in California; globally the alliance is widespread, abundant, and secure.

California Coastal Sagebrush

The California Coastal Sagebrush alliance occurs along the central and south coast of California, as well as on the Channel Islands. This alliance occurs between sea level and 3,937 feet. This community often forms on steep, north-facing slopes and, rarely, flooded low-gradient deposits along streams in shallow alluvial or colluvial-derived soils. California coastal sagebrush scrub is located on the very steep, north-facing slopes of the study area, southwest of Slope 3. This vegetation community is dominated by coastal sagebrush, but is also accompanied by California laurel (*Umbellularia californica*), ripgut brome (*Bromus diandrus*), and tree tobacco (*Nicotiana glauca*).

Disturbed California Coastal Sagebrush

On-site, the disturbed form of California Coastal Sagebrush alliance occurs in the northern portion of the survey area, to the northwest of the mapped California coastal sagebrush alliance. This plant community is dominated by Uruguayan pampas grass (*Cortaderia selloana*) and bare ground with coastal sagebrush scattered throughout the area. Where the cover of California coastal sagebrush association species was 20 to 30 percent, these areas were mapped as the disturbed form. Disturbed California coastal sagebrush alliance on-site was mapped within extremely steep portions of the proposed project development area.

Figure 5.3-1 - Vegetation Communities and Land Covers Map

5. Environmental Analysis

Source: Dudek, 2017

5. Environmental Analysis
BIOLOGICAL RESOURCES

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Upland Mustards Seminatural Stands

Upland Mustards Seminatural Stands consist of herbaceous vegetation dominated by various nonnative mustard, mostly annual and biennial species, including black mustard *(Brassica nigra),* common mustard *(B. rapa),* Saharan mustard *(B. tournefortii),* shortpod mustard *(Hirschfeldia incana),* Dyer's woad *(Isatis tinctorial),* or wild radish (*Raphanus sativus)*. Most of these species are invasive exotics. Mustards encompass a large portion of the landscape. Multiple mustard species occur within the survey area, including *Brassica nigra, Hirschfeldia incana*, and *Raphanus sativus*. Upland mustards seminatural strands vegetation community is located throughout most of the study area's open landscape and is indicative of the site's disturbance history.

California Annual (Nonnative) Grassland

California annual grassland (also referred to as non-native grassland in the biological resources report) is characterized by a mixture of weedy, introduced annuals, primarily grasses. California annual grassland typically includes oats (*Avena* spp.), bromes (*Bromus diandrus*, *B. madritensis*, *B. hordeaceus*), black mustard, stork's bill (*Erodium* spp.), dove weed (*Croton setiger*), prickly Russian thistle (*Salsola tragus*), and Maltese star-thistle (*Centaurea melitensis*). It may occur where disturbance by maintenance (e.g., mowing, scraping, disking, and spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation.

California annual grassland is located throughout the northern and southwestern portions of the project site. This vegetation community is dominated by bromes (*Bromus* spp.), slender oat (*Avena barbata*), common Mediterranean grass (*Schismus barbatus*), longbeak stork's bill (*Erodium botrys*), and black mustard (*Brassica nigra*). Coastal sagebrush was also found in low concentration within this vegetation community.

Disturbed

Disturbed land includes areas that experience or have experienced high levels of human disturbance and as a result are generally lacking vegetation. Areas mapped as disturbed land may include unpaved roads, trails, and graded areas. Vegetation in these areas, if present at all, is usually sparse and dominated by nonnative weedy herbaceous species.

Within the study area, disturbed land includes dirt roads and bare, open areas with less than 5 percent vegetative cover. Disturbed land is found throughout the study area, most notably at the top of the slope in the center of the project area and at the northeastern portion of the study area where mining operations were conducted.

Developed

Developed land refers to areas supported by man-made structures, including homes, yards, roadways, sidewalks, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Vegetation in these areas, if present at all, is typically associated with development landscaping. Within the biological survey study area, developed land is primarily dominated by surrounding residential development and a retirement home within the 500-foot buffer area, though there is a limited portion to the northeastern corner of the proposed development area consisting of a leveled and paved parking area and retaining walls constructed adjacent to some of the off-site private residences and associated landscaping.

Acreages on-site within each vegetation community and land cover are shown in Table 5.3-1, *Vegetation Communities and Land Covers Onsite.*

Table 5.3-1 Vegetation Communities and Land Covers Onsite

Vegetation Community/Land Cover	Area, Acres			
	500-Feet of Property Boundary (Acreage)	Total Property Boundary (Acreage)	Project Development Footprint (Acreage)	Brush Management Zone (Acreage)
Upland Communities				
Toyon Chaparral[1]	--	0.99	0.39	0.23
California Coastal Sagebrush	--	1.90	0.29	0.23
Disturbed California Coastal Sagebrush	--	0.89	--	0.10
Nonnative Grassland	3.04	6.75	2.74	0.39
Upland Mustards (Seminatural Strands)	3.15	9.07	0.23	--
Subtotal[2]	***6.19***	***19.60***	***3.66***	***0.96***
Nonnative Land Covers				
Disturbed Land	1.20	3.21	2.31	--
Ornamental	8.74	0.85	0.39	--
Developed Land	47.36	1.01	0.05	0.03
Subtotal[2]	***57.30***	***5.07***	***2.40***	***0.03***
Total	**63.50**	**24.67**	**6.06**	**0.99**

Source: Dudek 2018.
1 Sensitive vegetation community per CDFW.
2 Totals may not add to 100% due to rounding.

Wildlife

A total of 26 wildlife species were recorded on-site during surveys performed for the biological study.

Birds

A total of 21 bird species were audibly detected or observed on-site. Most bird species observed are common, disturbance-adapted species typical of urban and suburban settings such as song sparrow (*Melospiza melodia*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), and house finch (*Haemorhous mexicanus*). One Cooper's hawk (*Accipiter cooperii*) and a red-tailed hawk (*Buteo jamaicensis*) were observed. Other birds may use the property boundary and/or surrounding areas; however, no additional bird species were observed within the study area. Vegetation onsite—that is, the entire project site except for disturbed land (3.21 acres) and developed land (1.01 acres), or 20.45 acres—could be used for nesting by migratory birds protected under the MBTA and the California Fish and Game Code Sections 3503 et seq.

Reptiles and Amphibians

Two reptiles were observed within the study area: common side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*).

Mammals

Three mammal species were detected within the study area during the survey: Botta's pocket gopher (*Thomomys bottae.*), striped skunk (*Mephitis mephitis*), and brush rabbit (*Mephitis mephitis*).

5.3.1.3 SENSITIVE RESOURCES

Sensitive Natural Communities

Toyon chaparral—of which there is 0.99 acre onsite—is considered a sensitive natural community in California.

Sensitive Plants

No sensitive plant species were observed on-site during botanical surveys of the site in April 2015 and June 2016. No special-status species known to occur in the project region were determined to have a moderate to high potential to occur on-site. Habitat preferences of sensitive plant species known to occur in the region, and the potential of each species to occur on-site, are described in the biological report included as Appendix C to this DEIR.

Sensitive Animal Species

One sensitive animal species, Cooper's hawk (*Accipiter cooperii*) was identified onsite during general and focused surveys conducted between April 2015 and June 2016. Cooper's hawk breeds in extensive forests, smaller woodlots of deciduous, coniferous, and mixed pine-hardwoods; however, this species has also adapted to nest sites in both suburban and urban habitats. In urban areas, Cooper's hawks are known to nest in tall ornamental trees. This species was observed foraging in the upland mustard habitat in the central portion of the site in April 2016. Although this species did not exhibit breeding behavior and active nests were not observed during the site visit, the ornamental trees in the northern, western, and southern portions of the study area could provide suitable nesting substrate for Cooper's hawk and other raptors (e.g., red-tail hawk).

Two other sensitive animal species have a low to moderate potential to occur onsite: burrowing owl (*Athene cunicularia*) and western mastiff bat (*Eumops perotis californicus*). The burrowing owl is a CDFW Species of Special Concern. Burrowing owls are yearlong residents of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon–juniper and ponderosa pine habitats. Preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils.

The western mastiff bat is a Species of Special Concern and has a Western Bat Working Group (WBWG) status of high priority (H). It can be found in a variety of habitats in the southwestern United States from desert and coastal scrub to coniferous forests and woodlands. Roosting sites tend to be in rocky crevices or cliffs that provide vertical protection from predators. The bat can also be found roosting in trees or man-made tunnels, chimneys, or other overhang structures.

Coastal California gnatcatcher is federally listed as threatened (FT) and is a Species of Special Concern. Coastal California gnatcatchers generally prefer open sage scrub habitats with California coastal sagebrush as a dominant or co-dominant species. Coastal sage scrub is a vegetation community that includes plant species

such as buckwheat, white, black and purple sage, bush sunflower, laurel sumac, lemonade berry, and the most common shrub, the California coastal sagebrush. Nest placement is typically in areas of less than 40 percent slope gradient. No California gnatcatcher pairs or individuals were observed within the study area during focused surveys conducted for coastal California gnatcatcher between April 2015 and June 2016. Additionally, the terrain in the study area is steeper than typically preferred by this species, and there is poor connection to existing known populations. While the project site is in federally designated critical habitat (Unit 8: Palos Verde Peninsula Subregion), it is unlikely that coastal California gnatcatchers would inhabit coastal sage scrub habitats mapped within the property boundary, including the proposed project development footprint, due to the steep terrain, proximity of the habitat to roads and disturbance, and the minimal and fragmented amount of suitable habitat present within the study area.

5.3.1.4 JURISDICTIONAL WATERS AND WETLANDS

A concrete-lined channel identified as Water Feature A in the biological study—108 feet long, 0.07 acre in area, and located along the southern site boundary—was determined to be potentially jurisdictional waters of the United States and waters of the State. Following, the southern concrete wall of the southern portion of the property, Water Feature A is outside of the proposed development area along the southern boundary of Slope 3. Because the channel is concrete-lined, it lacks vegetation; thus, these water features lack hydrophytic vegetation adjacent to the channel. No surface water was observed during the site visit. Due to the absence of hydric soils and hydrophytic vegetation, no wetlands were identified within the proposed project development footprint.

5.3.1.5 WILDLIFE CORRIDORS

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for dispersal or migration of animals as well as dispersal of plants. Wildlife corridors contribute to population viability by ensuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes such as fires.

Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage is a potential route for gene flow and long-term dispersal. Habitat linkages may serve both as habitat and avenues of gene flow for small animals such as reptiles, amphibians, and rodents. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as stepping stones for dispersal and movement (especially for birds and flying insects).

The project site is not in a wildlife corridor or habitat linkage.

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

B-1 Have a substantial 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 Game or U.S. Fish and Wildlife Service.

B-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

B-3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

B-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.

B-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

B-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.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold B-3
- Threshold B-5
- Threshold B-6

These impacts will not be addressed in the following analysis.

5.3.3 Environmental Impacts

5.3.3.1 METHODOLOGY

The proposed project involves the development of 248 dwelling units with a minimum lot size of 248,878 square feet (5.71 acres), and includes the construction of maintenance roads and biological retention areas. The development is proposed within a disturbed depression and terraced area along the northeastern portion of

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

the property boundary, east and south of a moderate to steep slope, where former mining operations were prevalent in the past. Additionally, brush management zone would be maintained 100 feet from the building limit, and would be free of brush, flammable vegetation, and combustible growth, in accordance with the California Public Resources Code Sections 4291 et seq. and California Fire Code Chapter 49, Requirements for Wildland-Urban Interface Fire Areas. Brush management zones are also analyzed as permanent impacts in the analysis. Project impacts are estimated to total approximately 5.71acres for the proposed project development footprint and a 0.99 acre for brush management zone within the 6.0 acre of Lot 2. The remaining 12.92acres of Lot 3 are not proposed for development or as brush management zone, but are proposed to remain in its current state.

Data regarding biological resources in the study area were obtained through a review of pertinent literature and field reconnaissance. Special-status biological resources present or potentially present in the study area were identified through a literature search using the following sources:

- USFWS Critical Habitat and Occurrence Data (USFWS 2016a) within 5 miles of the project area.
- CDFW California Natural Diversity Database (CDFW 2016a) was queried to compile a list of potentially occurring flora and fauna in the Torrance USGS 7.5-minute topographic quadrangle and surrounding six quadrangles.
- California Native Plant Society Inventory of Rare, Threatened, and Endangered Plants of California, 8th online edition (CNPS 2016), was searched to compose a list of potentially occurring flora in the Torrance US Geological Survey (USGS) 7.5-minute topographic quadrangle and surrounding six quadrangles.
- USFWS National Wetlands Inventory Geographic Information System (GIS) Data (USFWS 2016b).
- Los Angeles County GIS Data Portal searched for potential hydric soils (County of Los Angeles 2004).
- USGS National Hydrography Dataset (USGS 2016).
- 1:200-scale aerial photographs and USGS 7.5-minute topographic quadrangles were reviewed for potential habitat and jurisdictional resources (Bing Maps 2016; Google Earth 2016; USGS 1981).

Between April 2015 and June 2016, Dudek conducted vegetation mapping, a habitat assessment for special-status species to occur, special-status plant surveys for early and late blooming species, focused surveys for burrowing owl (*Athene cunicularia*) and coastal California gnatcatcher (*Polioptila californica californica*), and a jurisdictional delineation. The jurisdictional delineation was conducted in the 24.68-acre project site. The remainder of the biological surveys were conducted in the 24.68-acre project site, plus a 500-foot buffer from the property boundary.

Impacts were determined and quantified by digitally overlaying the limits of development provided by the applicant onto the biological resources map. One water feature (Water Feature A) along the southern portion of the property boundary conveys water to a concrete v-ditch south of the property boundary. To assist in the determination of jurisdictional areas on-site, data was collected at 25 locations (i.e., data stations). Hydrology, vegetation, and soils were assessed, and data were collected and summarized in the biological study. Photographs documenting the data stations and associated drainages are provided in the biological study (DEIR Appendix C).

Direct permanent impacts, direct temporary impacts, and indirect impacts were all analyzed in the biological study for the purpose of this DEIR.

Direct permanent impacts refer to the absolute and permanent physical loss of a biological resource due to clearing and grading associated with implementation of the project and are analyzed in four ways: (1) permanent loss of vegetation communities, land covers, and general wildlife and their habitat; (2) permanent loss of or harm to individuals of special-status plant and wildlife species; (3) permanent loss of suitable habitat for special-status species; and (4) permanent loss of wildlife movement and habitat connectivity in the project area. Direct impacts associated with the proposed project include the residential development and installation of the flood/debris control infrastructure.

Direct temporary impacts refer to a temporal loss of vegetation communities and land covers resulting from vegetation and land cover clearing and grading associated with construction of proposed temporary haul roads and construction of proposed permanent new access roads, slope remediation, grade control structures, installation of culverts, and other improvements required for the project. The main criterion for direct temporary impacts is that impacts would occur for a short period of time and would be reversible. Areas temporarily disturbed by construction activities would be restored and revegetated with a native species mix, similar to what existed prior to disturbance, following completion of work in the area such that full biological function can be restored.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct construction disturbance zone that may occur during construction (i.e., short-term construction-related indirect impacts) or later in time as a result of the development (i.e., long-term, or operational, indirect impacts). Indirect impacts may affect areas within the defined project development footprint but outside the construction disturbance zone, including open space and areas outside the project area, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas (i.e., development-related long-term effects). For the proposed project, it is assumed that the potential indirect impacts resulting from construction activities include dust, chemical pollution, noise, and general human presence that may temporarily disrupt species and habitat vitality, as well construction-related soil erosion and runoff that could affect downstream resources.

5.3.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Development of the proposed project could impact habitat for sensitive wildlife or plant species. [Threshold B-1]

Direct Impacts

Sensitive Bird Species

Burrowing owl was not detected during focused burrowing owl surveys conducted between April and June 2016. Suitable burrowing owl habitat occurs in nonnative grassland habitat throughout the study area. Nonnative grassland and disturbed areas mapped within the proposed project development footprint have the potential to support burrowing owl. Although suitable burrows (i.e., burrows with greater than four-inch diameter at entrance) were not detected within the proposed project development footprint, direct impacts to occupied burrowing owl nesting, foraging, or wintering habitat are considered significant without mitigation.

Cooper's hawk (*Accipiter cooperii*) was the only special-status bird species detected during surveys conducted between April and June 2016. There is a moderate potential for Cooper's hawk to nest within the ornamental trees within the northern, eastern, and southern portions of the study area. Although the proposed project development footprint does not provide suitable nesting or perching substrate, suitable habitat occurs within adjacent areas. Thus, direct impacts to Cooper's hawk and other raptors are not anticipated.

Coastal California gnatcatcher was not detected during focused surveys conducted for this species in 2016. Additionally, there is limited coastal scrub habitat within the property boundary, most of which occurs along steep slopes. These slopes are typically too steep for this species. The closest documented occurrence for coastal California gnatcatcher is approximately two miles south of the property boundary, and the study area is surrounded by development to the north, east, and south, with no suitable gnatcatcher habitat to the west. Although the property boundary is within USFWS-designated critical habitat for this species, coastal California gnatcatcher has a low chance of occurring within the study area based on the negative results of focused coastal California gnatcatcher surveys conducted in the study area in 2016, the small extent of coastal scrub and chaparral habitats within the study area, the steep slopes in which most of this habitat occurs, and the isolation of the site. Thus, there is a low potential for coastal California gnatcatcher to occur within the study area, no further analysis is required, and impacts to this species are not anticipated.

Sensitive Mammal Species

No special-status mammals were detected during the 2016 field survey. The only special-status mammal with low to moderate potential to forage or roost within the study area is western mastiff bat. Construction activities are anticipated to occur during daylight hours and would not impact occasional bats foraging in the study area. The steep cliffs within the property boundary may provide suitable roosting habitat for this species. However, this habitat is limited. Additionally, the closest documented occurrence of this species is over six miles north of the property boundary. Thus, direct and/or indirect impacts to suitable roosting habitat are anticipated to be minimal and impacts to western mastiff bat are considered less than significant.

Temporary Direct Impacts

Short-term, construction-related, or temporary direct impacts to special-status wildlife species would primarily result from vegetation removal activities. Clearing or trampling of vegetation communities outside the proposed impact limits could occur without avoidance and mitigation measures. These potential effects could reduce suitable habitat for wildlife species and alter their ecosystem, thus creating gaps in vegetation that allow exotic, nonnative plant species to become established. This impact would be significant if not mitigated.

Indirect Impacts

Short-Term Indirect Impacts

Short-term indirect impacts to sensitive animal species would primarily result from vegetation removal during grading associated with the construction of the new residential development and associated roads, as well as installation of flood/debris control infrastructure. Potential temporary indirect impacts could occur due to generation of fugitive dust, noise, lighting, chemical pollutants, increased human activity, and nonnative animal species. All special-status wildlife species observed or with a moderate to high potential to occur on-site could be impacted by potential temporary indirect impacts such as those listed below.

Generation of Fugitive Dust. Dust can impact vegetation surrounding the proposed project development footprint, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species.

Construction Noise. Project-related noise could occur from equipment used during construction activities. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startling, degraded communication with animals of the same species, damaged hearing from extremely loud noises, and increased vulnerability to predators. The use of mechanized hand tools could cause temporary disruption of behavior for the period the tool is in use, including causing wildlife to temporarily vacate an area and suppressing important activities, such as foraging. This impact is potentially significant.

Lighting. Lighting may affect behavioral activities, physiology, population ecology, and ecosystems of both diurnal and nocturnal wildlife. Light pollution has three types of effects: chronic or periodically increased illumination, unexpected changes in lighting, and direct glare. Chronic increased illumination includes skyglow, lighted buildings and towers, streetlights, and security lights. Unexpected changes in lighting may occur from vehicle lights or other discrete events such as spotlighting by law enforcement helicopters. Direct glare may be chronic or unexpected. As such, lighting impacts are potentially significant.

Chemical Pollutants. Accidental spills of hazardous chemicals could contaminate surface waters and indirectly impact wildlife species through direct or secondary poisoning and other sublethal effects (e.g., endocrine impacts), reduced prey availability, or altering suitable habitat.

Increased Human Activity. Construction activities can deter wildlife from using habitat areas near or adjacent to the proposed activities while activities are in progress.

Predatory Animals. Trash and garbage from project-related activities could attract invasive predators such as ravens, gulls, crows, opossums, skunks, and raccoons that could impact the native wildlife species in the project area, including increased predation.

Long-Term Indirect Impacts

Potential long-term or permanent indirect impacts to special-status wildlife species include the invasion of nonnative, invasive plant and animal species; habitat fragmentation; and altered hydrology.

Nonnative Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Removal of vegetation could fragment native plant populations, which may increase the likelihood of invasion by nonnative plants due to the increased interface between natural habitats and developed areas. There are several adverse effects of nonnative species in natural open areas, including but not limited to the fact that nonnative, invasive plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Nonnative, invasive plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for sensitive and other native wildlife species. Invasive plant communities may also attract nonnative animals such as house mouse (*Mus musculus*) and rats (*Rattus* spp.) that may compete with and/or displace native species. Migratory bird collision into high rise buildings is a modern occurrence; however, the building will be designed with clear reflective glass to prevent such occurrence.

Altered Hydrology. The removal of vegetation and grading activities can alter the hydrology, and these hydrologic alterations may affect special-status wildlife species. Vegetation slows and absorbs rainfall; and roots help stabilize soil. Thus, removing vegetation and grading activities can increase soil erosion and runoff. Altered hydrology can allow for the establishment of nonnative plants, which in turn could affect the native vegetation communities and wildlife habitat.

Summary

Direct or indirect temporary impacts to the special-status wildlife, including burrowing owl as a result of direct disturbance or indirect impacts (e.g., fugitive dust, construction noise, lighting, chemical pollutants, increased human activity, and non-native, invasive plant and animal species) outside of the impact area would be significant absent mitigation.

Impact 5.3-2: Development of the proposed project would cause loss of 0.62 acre of toyon chaparral, a sensitive natural community. [Threshold B-2]

Direct Impacts

Direct permanent and temporary impacts to vegetation communities within the proposed project development footprint are summarized in Table 3.5-2, *Permanent and Temporary Direct Impacts to Vegetation Communities and Land Covers within the Solana Torrance Project Site*. Direct impacts to vegetation communities would occur as a result of vegetation removal activities. Site clearance before site grading would cause direct impacts to 0.62 acre of toyon

chaparral, a sensitive natural community, consisting of 0.39 acre in the development area and 0.23 acre in the brush management zone.

Table 5.3-2 Permanent and Temporary Direct Impacts to Vegetation Communities and Land Covers within the Solana Torrance Project Site

Vegetation Community/Land Cover	Area, Acres				
	Direct Permanent Impacts Project Development Area (Acreage)	Direct Permanent Impacts Burn Management Areas (Acreage)	Direct Temporary Impacts (Acreage)	Total Acreage within the Property Boundary (Acreage)	Remaining Open Space Acreage within the Property Boundary (Acreage)
Upland Communities					
California Coastal Sagebrush	0.29	0.23	--	1.90	1.37
Disturbed California Coastal Sagebrush	--	0.10	--	0.89	0.79
Nonnative Grassland	2.74	0.39	--	6.75	3.62
Subtotal	***3.03***	***0.73***	**--**	***9.54***	**5.78**
Woodland Communities					
Toyon Chaparral[1]	0.39	0.23	--	0.99	0.36
Subtotal	**0.39**	**0.23**	**--**	**0.99**	**0.36**
Non-Native Land Covers					
Developed Land	0.05	0.03	--	1.01	0.93
Disturbed Land	2.31	--	--	3.21	0.90
Ornamental	0.04	--	--	0.85	0.81
Upland Mustards (Semi-Natural Strands)	0.23	--	--	9.07	8.84
Subtotal	***2.63***	***0.03***	**--**	***14.14***	***11.48***
Total	**6.06**	**0.99**	**--**	**24.67**	**17.62**

Dudek 2018.
Note: Subtotals and totals may not add up due to rounding.
1 Sensitive vegetation community per CDFW.

Indirect Impacts

One additional indirect impact to toyon chaparral—both temporary and long-term—would be alteration of the natural fire regime. Urbanization alters wildfire regimes due to human activities at the open space–urban interface, such as accidental ignitions and intentional ignitions, such as arson. While wildfires are most likely to be ignited in edge areas, the actual effect of large wildfires can occur at the much broader landscape level, especially when fires are quickly spread into undeveloped lands by strong winds. These indirect impacts could affect the special-status vegetation communities with implementation of the proposed project.

Impact 5.3-3: Project development would impact vegetation that could be used for nesting by birds protected under federal and state laws. Development would not impact wildlife movement or migration corridors. [Threshold B-4]

Nesting Birds

Nesting native birds protected under the Migratory Bird Treaty Act and California Fish and Game Code could occur within and adjacent to the proposed development area. The study area does not function as a designated wildlife corridor or habitat linkage and is not expected to impact designated wildlife corridors or habitat linkages identified in the South Coast Missing Linkages analysis conducted by South Coast Wildlands (Dudek 2017). Direct and indirect significant impacts to nesting native birds could occur without mitigation measures.

5.3.4 Cumulative Impacts

The area considered for cumulative impacts to biological resources is the Palos Verdes Hills, covering about 25 square miles of the central and western Palos Verdes Peninsula of southwest Los Angeles County. A Draft Rancho Palos Verdes Habitat Conservation Plan has been prepared that would span more than half of the Palos Verdes Hills (13.5 square miles, or approximately 8,640 acres). The HCP would encompass five natural vegetation communities and cover 10 species (6 plant species, 2 bird species, and 2 insect species). The proposed HCP Reserve would span about 1,504 acres (RPV 2018). The existing Palos Verdes Nature Preserve, owned by the City of Rancho Palos Verdes and managed by the Palos Verdes Peninsula Land Conservancy, spans about 1,400 acres in 10 Reserves (PVPLC 2019). About 4,462 acres in the Palos Verdes Hills are designated critical habitat for the coastal California gnatcatcher.

Sensitive Species and Natural Communities

Future projects would impact suitable habitat for sensitive species protected under laws such as FESA, CESA, and the California Native Plant Protection Act. By law, such projects would be required to implement all feasible mitigation measures to reduce such impacts. Therefore, the proposed project's contribution to cumulative impacts related to sensitive species and natural communities would not be cumulatively considerable, and cumulative impacts would be less than significant.

Nesting Birds

Future projects would impact nesting birds protected under the Migratory Bird Treaty Act and California Fish and Game Code. By law, such project would be required to implement all feasible mitigation measure to reduce such impacts. Therefore, the proposed project's contribution to cumulative impacts related to nesting birds would not be cumulatively considerable , and cumulative impacts would be less than significant.

Jurisdictional Waters and Wetlands

Numerous small ephemeral streams in the Palos Verdes Hills are mapped as wetlands on the National Wetlands Mapper maintained by the US Fish and Wildlife Service (USFWS 2017). Some other projects would impact wetlands by filling or changing surface water flows discharging into wetlands. Other projects would be required to obtain permits for impacts to wetlands under the federal Clean Water Act from the Corps and the Los

Angeles RWQCB, and under the California Fish and Game Code from the CDFW. Permit conditions would include mitigation for impacts. Therefore, due to the project's distance from the closest jurisdictional waters. the proposed project's contribution to cumulative impacts related to jurisdictional waters and wetlands would not be cumulatively considerable, and cumulative impacts would be less than significant.

Habitat Conservation Plan

The Draft Rancho Palos Verdes HCP spans about 13.5 square miles of the Palos Verdes Hills. Pending approval of the HCP by the USFWS and/or CDFW, projects in the HCP Area would obtain take authorization for impacts to covered species and habitats through the HCP by dedicating land or paying fees to the HCP (RPV 2018). The proposed project is not within the study area of the Draft Rancho Palos Verdes HCP. Cumulative impacts are expected to be less than significant, and project impacts would not be cumulatively considerable.

5.3.5 Existing Regulations and Standard Conditions

Federal

United States Code, Title 16, Sections 1531 et seq.: Endangered Species Act

United States Code, Title 16, Sections 703-712: Migratory Bird Treaty Act

State

California Fish and Game Code, Section 2080: Endangered Species Act

California Fish and Game Code Sections 2800 et seq.: Natural Community Conservation Planning Act

California Fish and Game Code, Section 1600: Lakes and Streambeds

California Public Resources Code Sections 30000 et seq.: California Coastal Act

California Fish and Game Code, Sections 3503 et seq.: Protections for birds

California Fish and Game Code Sections 1900 et seq.: California Native Plant Protection Act

5.3.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be **potentially significant**:

- Impact 5.3-1 Project development could impact burrowing owl (*Athene cunicularia*) and result in indirect impacts to sensitive species.
- Impact 5.3-2 Project development would cause loss of 0.62 acre of Toyon chaparral, a sensitive natural community.
- Impact 5.3-3 Project development would impact vegetation that could be used for nesting by birds protected under existing laws.

5.3.7 Mitigation Measures

Impact 5.3-1

Direct Impacts to Burrowing Owl

BIO-1 Potentially suitable habitat to support burrowing owl is present within the proposed project development footprint and adjacent areas. Prior to the initiation of construction activities, a qualified biologist shall conduct preconstruction clearance surveys for burrowing owl. These shall be conducted in accordance with the most current CDFW protocol within 30 days of site disturbance to determine whether burrowing owl is present at the site (CDFW 2012). Preconstruction surveys shall include suitable burrowing owl habitat (e.g., areas with open habitat, low slope terrain, 4-inch or greater diameter burrows) within the proposed project development footprint, brush management zone, and an appropriate buffer as required in the most recent guidelines and where legal access to conduct the survey exists. If burrowing owls are not detected during the clearance survey, no additional mitigation is required.

If burrowing owls are located, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and capable of independent survival. A 500-foot no-disturbance buffer (where no work activities may be conducted) will be maintained between project activities and nesting burrowing owls during the nesting season, unless otherwise authorized by CDFW. If burrowing owl are detected during the nonbreeding season (September 1 through January 31) or confirmed to not be nesting, a 160-foot buffer no-disturbance buffer will be maintained between the project activities and occupied burrow.

Alternatively, a Burrowing Owl Relocation and Mitigation Plan may be prepared and implemented to relocate nonbreeding burrowing owls from the proposed project development footprint. The plan will detail methods and guidance for passive relocation of burrowing owls from the proposed project development footprint, provide monitoring and management of the replacement burrow sites, reporting requirements, and ensure that a minimum of two suitable, unoccupied burrows are available off-site for every burrowing owl burrow that is closed. Construction work may proceed after owls have been excluded from the site following accepted protocol and approval of CDFW. Results of the surveys and relocation efforts shall be provided to CDFW.

Indirect Impacts to Sensitive Species

BIO-2 The following construction best management practices (BMPs) shall be implemented to minimize indirect impacts to special-status wildlife species during construction activities.

- **Avoid Wildlife Entrapment.**

a. Backfill Trenches. At the end of each workday, check that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled, covered, or sloped to allow wildlife egress. Should wildlife become trapped, a qualified biologist shall remove and relocate it.

b. Avoid entrapment of nesting or migratory birds. All pipes or other construction materials or supplies will be covered or capped in storage or laydown areas at the end of each workday. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently.

- **Trash.** All food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers and removed daily from the proposed project development footprint. When construction operations are completed, any remaining trash will be removed from the work area.
- **Lighting.** Lighting along the perimeter of natural areas shall be shielded and oriented to minimize light shine into the natural areas.

Impact 5.3-2

Indirect Impacts to Toyon Chaparral

BIO-3 The following measures shall be implemented during construction activities to reduce indirect impacts to toyon chaparral, a sensitive natural community.

- **Mark Disturbance Limits.** To prevent inadvertent disturbance to special-status vegetation communities outside the limits of work, the construction limits shall be clearly demarcated (e.g., installation of flagging or temporary high visibility construction fence) prior to ground disturbance activities. All construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits. Vegetation removal shall be monitored by a biologist and standard best management practices (BMPs) will be implemented. A biologist shall be contracted to perform biological monitoring during all clearing activities.

The biological monitor shall carry out the following:

a. Review and/or designate the vegetation removal area in the field with the contractor in accordance with the final plan.

b. Be present during initial vegetation clearing and grubbing.

c. Record any advertent impacts to vegetation communities outside the designated construction zone in monthly monitoring reports to be provided to the City's Community Development Department.

- **Standard Dust Control Measures.** Standard dust control measures shall be implemented to reduce impacts on nearby plants and wildlife during construction. Measures may include replacing ground cover in disturbed areas as quickly as possible, frequently watering active work sites, installation of shaker plates, and suspending excavation and grading operations during periods of high winds.
- **Minimize Spills of Hazardous Materials.** All vehicles and equipment shall be maintained in proper condition to minimize the potential for spills of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials during construction. Hazardous spills shall be immediately cleaned up, and the contaminated soil shall be properly handled or disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated staging area.
- **Landscape Design.** Prior to installation of any landscaping, plant palettes shall be reviewed by the project biologist to minimize the effects that proposed landscape plants could have on biological resources outside of the impact footprint due to potential naturalization of landscape plants in the area designated as open space. Landscape plants will not include invasive plant species on the most recent version of the Cal-IPC California Invasive Plant Inventory for the project region. All plant stock shall be fumigated for pests, including Argentine ants, just prior to bringing the plants to the site for installation. Landscape plans will include a plant palette composed of native or nonnative, noninvasive species that do not require high irrigation rates.

Impact 5.3-3

BIO-4 The following measures shall be implemented to reduce impacts to nesting birds.

Ground-disturbance and vegetation removal activities shall be avoided during nesting bird season, from approximately February 15 through August 31. If ground-disturbing and/or vegetation removal activities cannot be completed outside the nesting bird season, the following measures shall be implemented:

- Surveys shall be conducted by a qualified biologist within 300 feet of disturbance areas (500 feet for raptors) within the project site no earlier than 3 days prior to the commencement of disturbance. If ground-disturbance activities are delayed, then additional predisturbance surveys shall be conducted such that no more than 3 days will have elapsed between the survey and ground-disturbance activities. Surveys need not be conducted if topography, high traffic roads, or buildings buffer the survey zone (i.e., if a commercial building occurs 100 feet away from construction, surveys would end at the limit of the building and not be required beyond).
- If active nests are found (CDFW defines "active" as any nest that is under construction or modification; USFWS defines "active" as any nest that is currently supporting viable eggs, chicks, or juveniles), clearing and construction shall be postponed or halted within a buffer area established by the qualified biologist that is suitable to the particular bird

species and location of the nest (typically a starting point of 300 feet for most birds and 500 feet for raptors, but may be reduced as approved by the biologist), until the nest is vacated and/or juveniles have fledged, as determined by the qualified biologist. The construction avoidance area shall be clearly demarcated in the field with highly visible construction fencing or flagging, and construction personnel shall be instructed on the sensitivity of nest areas.

A qualified biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests occur. The results of the surveys, including graphics showing the locations of any active nests detected, and documentation of any avoidance measures taken, shall be submitted to the City within 7 days of completion of the preconstruction surveys or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds.

- Surveys, and resulting buffers, will be repeated if construction within any phase is paused for more than 30 days.

5.3.8 Level of Significance After Mitigation

Impact 5.3-1

Avoidance and/or relocation of burrowing owls, as required under BIO-1, would reduce impacts to burrowing owl to less than significant. Implementation of MM-BIO-2 would reduce indirect impact to special-status wildlife species to less than significant.

Impact 5.3-2

Implementation of BIO-3 would reduce indirect impacts to toyon chaparral to less than significant.

Impact 5.3-3

Avoidance of active nests, as required under BIO-4, would reduce impacts to nesting birds to less than significant.

No significant and unavoidable impacts would occur.

5.3.9 References

Department of the Interior, Fish and Wildlife Service. 2000, October 24. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the Coastal California Gnatcatcher. https://www.fws.gov/policy/library/2000/00fr63679.pdf.

California Department of Fish and Wildlife (CDFW). 2012, March 7. Staff Report on Burrowing Owl Mitigation. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true

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Dudek. 2017, June. Biological Resources Technical Report for the Solana Torrance Project, City of Torrance, California.

Palos Verdes Peninsula Land Conservancy (PVPLC). 2019, January 17. Palos Verdes Nature Preserve. https://pvplc.org/_lands/pvnp.asp.

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US Fish and Wildlife Service (USFWS). 2017, August 8. National Wetlands Mapper. http://www.fws.gov/wetlands/data/mapper.HTML.

5.4 CULTURAL RESOURCES

Cultural resources comprise archaeological and historical resources. Archaeological resources are prehistoric or historic evidence of past human activities, including structural ruins and buried resources. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. In California, historic resources cover human activities over the past 12,000 years. Cultural resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. Native American tribal cultural resources are addressed in Section 5.13, *Tribal Cultural Resources*, of this DEIR.

Paleontological resources are addressed in Section 5.5, *Geology and Soils*, pursuant to the CEQA Guidelines Update approved in December 2018.

This section of the DEIR evaluates the potential for implementation of the Project to impact cultural resources in the City of Torrance. The analysis in this section is based in part on the following information:

- *Cultural Records Investigation Report, Solana Residential Development, within the City of Torrance, Los Angeles County, California,* Paleo Solutions, Inc., November 12, 2018.

A complete copy of the Cultural Records Investigation Report is in the technical appendices of this DEIR (Appendix D).

5.4.1 Environmental Setting

5.4.1.1 REGULATORY BACKGROUND

Federal and State Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 Review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

California Public Resources Code

Archaeological, paleontological, and historical sites are protected under a wide variety of state policies and regulations in the California Public Resources Code (PRC). In addition, cultural and paleontological resources are recognized as nonrenewable resources and receive protection under the PRC and CEQA.

PRC Sections 5020 to 5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for designating State Historical Landmarks and Historical Points of Interest.

PRC Sections 5079 to 5079.65 define the functions and duties of the Office of Historic Preservation (OHP), which administers federal- and state-mandated historic preservation programs in California as well as the California Heritage Fund.

Several additional federal and state laws protecting Native American tribal cultural resources are described in Section 5.13, *Tribal Cultural Resources*, of this DEIR.

5.4.1.2 CULTURAL SETTING

Historic Uses of the Site

A diatomaceous earth mine operated onsite from the early 1900s to the late 1950s. Diatomaceous earth mining was discontinued primarily due to reserve depletion; in addition, the diatomite ore in this area was low grade, generating large amounts of tailings (LACSD 1995). The 35-acre site of Ernie Howlett Park, abutting part of the southwest project site boundary, is the northwest end of the former 290-acre Palos Verdes Landfill that operated between 1957 and 1980. Diatomaceous earth, sand, and gravel mining were conducted on and near the landfill site from the early 1900s to the 1950s (LACSD 2017).

Historic Aerial Photographs

The Phase I Environmental Site Assessment (ESA) for the project site included review of historic aerial photographs dated 1928 through 2012. Mining operation is shown onsite from early to mid-1900s. The site has been vacant since the late 1950s. Aerial photos dated 2009 and 2010 show work filling the mine pit in the development area.

Via Valmonte appears in its current location as early as the 1920s. The adjoining Hawthorne Boulevard is developed in its current configuration as early as 1970. The former Shell gasoline station adjoining the project site to the south appears as early as 1970 and up to 2005. The gasoline station was removed by 2009 and replaced by the current assisted living facility. Development of housing in the general area began as early as 1928 and was widespread by 1954. The 1954 photograph shows several houses west and southwest of the site and a few houses north of Via Valmonte. By 1970 the houses west and southwest of the site were largely developed similar to current conditions, and by 1977 the houses along the north site boundary south of Via Valmonte were also largely completed. Ernie Howlett Park was developed between 1981 and 1989 (Kennedy/Jenks 2015).

Historic Topographic Maps

During preparation of the cultural resources report, Paleo Solutions also reviewed the project area on several historic USGS Torrance, California 15-minute quadrangles (1896, 1925, 1942, 1953, 1966, and 1975 [photo revised in 1979]). A road alignment along the general path of Newton Street and one homestead, approximately 1,000 feet to north of the current project area, are visible as early as 1896. By the 1920s, the initial alignment of Via Valmonte is present. Hawthorne Boulevard is visible to the north of the project area; however, it does not extend south beyond its intersection with Via Valmonte. At this time, the neighborhood of Walteria was beginning to form to the northeast.

Until 1942 the elevation in the project area ranged from 225 feet amsl at the lowest point to 461 feet amsl at the highest point of the hilltop. By 1942, mining activity became visible in the eastern portion of the project area with a base depth of approximately 200 feet amsl. By 1953, mining activities had extended further west with a base depth of 175 feet amsl. By 1966, the extent of the mining operations was consistent with the current boundaries and topography. By the 1979 revisions to the 1975 USGS quadrangle, Hawthorne Boulevard was visible along its current route, and Via Valmonte had been finalized.

History of Torrance, Palos Verdes Estates, and Rolling Hills Estates

The site of present-day Torrance was part of the Rancho San Pedro, the first California land grant, given to Juan Jose Dominguez in 1784 by the governor of California.[1] The Dominguez Family retained ownership of the rancho when Mexico won independence from Spain in 1821 and again when the United States took control of California in 1848, although the size of the land grant diminished considerably in the process.

Torrance was founded in 1912 as a model industrial city and incorporated in 1921. Oil was discovered in 1921; by 1925 there were 582 producing wells in the City (McKenna 2009). The City was nearly built out in a late 1940s housing boom (THS 2017).

The present-day City of Palos Verdes Estates began to be developed in 1913 and was incorporated in 1939 (Palos Verdes Estates 2017). The City of Rolling Hills Estates was incorporated in 1957 (Rolling Hills Estates 2017).

Mining is important in the history of the Palos Verdes Hills; the US Geological Survey Mineral Resources Data System lists nine former mines in the Palos Verdes Hills: six sand and gravel mines, one diatomaceous earth mine (in the City of Rancho Palos Verdes, not the former mine on the proposed project site), one stone quarry, and one dolomite/limestone quarry (USGS 2017).

5.4.1.3 CULTURAL RESOURCES

Historical Resources

No cultural resources were identified in the project site in the records search at the South Central Coastal Information Center (SCCIC). Three cultural resources were identified within 0.5 mile of the site: two utility

[1] The Spanish Colonial Period of California history extends from 1769, when the first permanent European settlements in California—the Mission and Presidio of San Diego—were founded; until 1821, when Mexico won independence from Spain.

poles and the Jose Dolores Sepulveda adobe home located at 3601 Courtney Way; the last resource is a California State Historic Landmark. No cultural resources were identified during the field survey of the site (Paleo Solutions 2018). The cut slopes and debris remaining from the former mining operation are not considered significant historical resources.

Mirlo Gate Lodge, built in 1926, at 4420 Via Valmonte—about 550 feet northwest of the project site—is designated a local historical landmark by the Rancho de Palos Verdes Historical Society. The two-story circular stone gatehouse, designed by George H. Howard (1864–1935), has 18-inch-thick walls and contains a kitchen, living room, bedroom, and bathroom (Megowan 2017). Howard designed the Burlingame, California, train station, also a California historical landmark, and about 75 homes on the San Francisco Peninsula (Garrison 2012).

Archaeological Resources

No archaeological resources were identified on-site or within 0.5 mile of the site (Paleo Solutions 2018). Archaeological sites are known from the northern and western slopes of the Palos Verdes Hills, including CA-LAN-138, approximately 2.8 miles from the project site, the Malaga Cove site—a large village site with dense midden deposits in the Hollywood Riviera portion of the City of Torrance and overlooking the Pacific Ocean (Torrance 2009).

5.4.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated the with lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC § 5024.1; 14 CCR § 4852)

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

C-1 Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.

C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

C-3 Disturb any human remains, including those interred outside of dedicated cemeteries.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold C-3

This impact will not be addressed in the following analysis, except Native American human remains which are addressed in Section 5.13.

Impacts to paleontological resources are addressed in Section 5.5, *Geology and Soils*.

5.4.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

5.4.3.1 METHODOLOGY

The Cultural Resources Investigation for the proposed project consisted of a records search at the SCCIC at California State University Fullerton and an intensive foot survey of the project site (Paleo Solutions 2018). An intensive pedestrian survey of the project area was performed on September 4, 2018. The intensive level survey methods consisted of a pedestrian survey of the accessible areas of the Project area in parallel transects spaced no more than 10 meters apart. Deviations from transects only occurred in areas containing steep slopes.

Comments on the Notice of Preparation

The City of Rancho Palos Verdes, in a comment letter dated August 28, 2017, noted that the Mirlo Gate Lodge, at 4420 Via Valmonte in the City of Palos Verdes Estates, has been designated a local historical landmark by the Rancho de Palos Verdes Historical Society, and asked that project impacts to the Mirlo Gate Lodge be evaluated in the EIR.

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

5.4.3.2 IMPACT ANALYSIS

Impact 5.4-1: Development of the project would not impact an identified historic resource. [Threshold C-1]

No historic resources on-site were identified in the records search conducted by the SCCIC. Three cultural resources were identified within 0.5 mile of the site: two utility poles and the location of the Jose Dolores Sepulveda adobe home located at 3601 Courtney Way. The two utility poles were determined ineligible for the National Register of Historic Places, while the Jose Dolores Sepulveda adobe home was determined to be a California State Historic Landmark in 1944. None of these three resources overlap, or are within the project site (Paleo Solutions 2018). Additionally, the Jose Dolores Sepulveda adobe home has been replaced by a single family built in 1975. The project would not result in alterations of these resources or obstruct the views of these resources. Therefore, development of the project would not impact these cultural resources.

The Mirlo Gate Lodge is at 4420 Via Valmonte about 550 feet northwest of the project site. Views of the development area from the Mirlo Gate Lodge are blocked by intervening buildings and by Slope 1 on-site. The Lodge is not visible from Hawthorne Boulevard or the project site. There are no public views of the Lodge from any vantage point that would be blocked due to project implementation. Thus, project development would not alter the historical significance or obstruct the views of the Mirlo Gate Lodge.

Artificial fill soil on-site contains localized pockets of debris such as wire, PVC pipe, and plastic and metal debris (Geocon West 2017). Mining is important in the history of the Palos Verdes Hills; the UG Geological Survey Mineral Resources Data System lists nine former mines in the Palos Verdes Hills (USGS 2017). However, it is expected that mining equipment or other artifacts that could yield information important to the history of the Palos Verdes Peninsula would have been removed by the mine operator before or during closure of the mine, and that surface or surface material associated with past prehistoric or historic-period use of the project area would most likely have been confined to the original top 5 to 10 feet of sediments, which are no longer present in the project area. Therefore, the debris remaining in the fill soil is not historically significant and impacts would be less than significant.

Impact 5.4-2: Development of the project could impact archaeological resources. [Threshold C-2]

No archaeological resources were identified in the cultural resources investigation. Given the original elevation of 225 to 461 feet amsl and the current elevation of 150 feet amsl, this indicates that between 75 and 311 feet of the original top sediments of the project area have been removed during past mining operations that began in early to mid-1900s. Surface or subsurface archaeological materials associated with past prehistoric or historic-period use of the project area would most likely have been confined to the original top 5 to 10 feet of sediments, which are no longer present in the project area. Additionally, the majority of the project area is underlain with approxmately80 feet of overfill and modern refuse on the ground surface (fragments of concrete, wood, furniture, construction equipment, machinery parts, metal, glass, and plastics). No archaeological resources were identified within the project area as a result of the cultural resources study prepared for the proposed project. Although no known archaeological resources are present in the project vicinity, there could be a potential for buried archaeological resources to be discovered during grading. Therefore, a mitigation measure has been provided to reduce such impact to a less than significant level.

5.4.4 Cumulative Impacts

As described above, potential impacts related to historical, archaeological, and paleontological resources would be reduced to a level that is less than significant through the implementation of existing requirements and mitigation measures to ensure proper identification, treatment, and preservation of cultural resources on the project site.

Future construction activities in the project area could lead to degradation of the cultural resources. However, each development proposal received by the City undergoes environmental review and would be subject to the same resource protection requirements as the proposed project. If there is a potential for significant impacts on cultural or paleontological resources, an investigation will be required to determine the nature and extent of the resources and identify appropriate mitigation measures. Such investigations would identify resources on the affected project sites that are or appear to be eligible for listing on the NRHP CRHR. Such investigations would also recommend mitigation measures to protect and preserve cultural resources. The project site is assessed as having a low sensitivity for cultural resources (Paleo Solutions 2018) and impacts to cultural resources tend to be site-specific. Although there have been several cultural resources discovered in the surrounding area, no significant cultural resources were identified that if altered could combine with the effects of the project to result in a cumulatively significant impact to cultural resources.

Neither the proposed project, nor other cumulative development in the City, are expected to result in significant impacts to cultural or paleontological resources. Site-specific surveys and test and evaluation excavations are conducted to determine whether the resources are "unique archaeological resources" or "historical resources," and appropriate mitigation including, but not limited to, compliance with existing requirements were provided. Implementation of these measures would reduce the potential for adverse impacts on cultural resources both individually and cumulatively. As such, no significant cumulative impacts to cultural resources are expected to occur from the proposed project.

5.4.5 Existing Regulations and Standard Conditions

Federal

- United States Code, Title 16, Sections 470 et seq.: National Historic Preservation Act
- United States Code, Title 16, Sections 470aa et seq.: Archaeological Resources Protection Act

State

- California Public Resources Code Sections 5020–5029.5: Authorized State Historical Resources Commission.
- California Public Resources Code Sections 5079–5079.65: Authorized Office of Historic Preservation.

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and, the following impacts would be less than significant: 5.4-1.

Without mitigation, this impact would be potentially significant:

- Impact 5.4.2 Development of the project could impact archaeological resources.

5.4.7 Mitigation Measures

CUL-1 In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities, the resource must be evaluated for listing in the California Register of Historical Resources. Upon identification, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for archaeology, can evaluate the significance of the find and determine whether additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted. Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with archaeological resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to cultural resources remain.

5.4.8 References

Garrison, Joanne. 2012, October 8. Peninsula Royalty: The Founding Families of Burlingame-Hillsborough. Burlingame Historical Society. https://burlingamefoundingfamilies.wordpress.com/.

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5.5 GEOLOGY AND SOILS

This section of the DEIR evaluates the potential for implementation of the Solana Residential Development Project to impact geological and soil resources in the City of Torrance. The analysis in this section is based in part on the following technical report(s):

- *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., June 30, 2017.
- *Fault Rupture Hazard Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., January 21, 2016.
- *Suggested Contingency Facto for Estimation of Soil Excavation Quantity during Grading Proposed Multi-Family Residential Development Vesting Tentative Tract Map 74148, Lot 1 Hawthorne Boulevard and Via Valmonte Torrance, California.*
- *Paleontological Resources Assessment for the Solana Project, City of Torrance, Los Angeles County, California.* Paleo Solutions, October 5, 2018.

Complete copies of these studies are included in the Technical Appendices to this DEIR (Appendices E1, E2, and E3).

Twenty-eight comments relating to geology and geologic hazards were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential impacts relating to development within the former diatomaceous earth mine, slope stability and soil stability. This Section focuses on the following impacts: landslides, collapsible soils, expansive soils, and paleontological resources. Impacts arising from liquefaction were identified as less than significant in the Initial Study included as Appendix A to this DEIR; but are analyzed in this Section due to relevant findings of the project geotechnical investigation. Soil erosion is analyzed in this DEIR in Section 5.8, Hydrology and Water Quality. Impacts related to rupture of earthquake fault, seismic ground shaking, and usage of septic tanks were determined to be less than significant in the Initial Study included as Appendix A to this DEIR. Existing conditions respecting faulting and earthquakes are summarized below in reference to earthquake-induced landslide impacts.

5.5.1 Environmental Setting

5.5.1.1 REGULATORY SETTING

State

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act requires the state geologist to delineate earthquake fault zones along faults that are "sufficiently active" and "well defined." The act requires that cities and counties withhold development permits for a site in an earthquake fault zone until geologic investigations demonstrate that the site is not threatened by surface displacements from future faulting. An active fault is one that has had surface displacement within Holocene Time (the last 11,000 years).Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act (SHMA) was adopted by the state in 1990 to protect the public from the effects of nonsurface fault rupture earthquake hazards, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey prepares seismic hazard zone maps and provides them to local governments; these maps identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. SHMA requires responsible agencies to only approve projects within seismic hazard zones following a site-specific investigation to determine if the hazard is present, and if so, the inclusion of appropriate mitigation(s). In addition, the SHMA requires real estate sellers and agents at the time of sale to disclose whether a property is within one of the designated seismic hazard zones.

2016 California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission, and the code is updated every three years. It is in Title 24, Part 2, of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2016 CBC, which took effect on January 1, 2017. Local jurisdictions may add amendments based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and people by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC's provisions for earthquake safety are based on factors such as occupancy type, the types of soil and rock onsite, and the strength of ground motion with a specified probability of occurring at the site. Provisions governing grading are set forth in CBC Appendix D, *Grading*.

California Building Code Section 1802 (Requirements for Geotechnical Investigations)

Requirements for geotechnical investigations for subdivisions requiring tentative and final maps and for other types of structures are in California Health and Safety Code, Sections 17953 to 17955, and in Section 1802 of the CBC. Testing of samples from subsurface investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness.

City of Torrance

The City of Torrance adopted the 2016 CBC, with local amendments, as Division 8, Chapter 1 of the City's Municipal Code. The City of Torrance's General Plan Safety Element identified requirements for new development to abide by the most recently adopted City and State seismic and geotechnical requirements to protect injury and structural damage due to geologic and seismic hazards. The City established a fault hazard management zone around the traces of the Palos Verdes fault that are considered more recently active. The intention of the fault hazard management zone is to require that geologic investigations, which may include

fault trenching, be performed if conventional structures designed for human occupancy are proposed within the zone (Torrance 2010).

5.5.1.2 EXISTING CONDITIONS

Regional Geologic Setting

The project site is on the northern slopes of the Palos Verdes Hills, the westernmost onshore uplifted area of the Peninsular Ranges Geomorphic Province, a series of mountain ranges separated by northwest-trending valleys. The Palos Verdes Hills are on the southern margin of the Los Angeles Basin, a coastal plain.

Faulting and Seismicity

The Palos Verdes Fault passes approximately 350 feet north of the project site (see Figure 5.5-1, *Local Fault Map*). The segment of the Palos Verdes Fault near the project site is not considered active by the California Geological Survey; as faults that have not moved in 11,000 years are not considered active.

Minor shearing onsite due to either folding of the Palos Verdes Hills or past earthquakes in the region was observed in the San Pedro Sand. The shears are not considered active faults; however, the shears could be subject to displacement during future earthquakes.

Other active faults in the region include the Cabrillo Fault, approximately 1.9 miles to the south, and the Newport-Inglewood Fault approximately 7.5 miles to the northeast (see Figure 5.5-2, *Regional Fault Map*). The Compton Thrust—a fault several miles underground that is not exposed at the surface—underlies most of the City of Torrance including the project site. Several other thrust faults (underground and not expressed at the surface) underlie the Los Angeles Basin.

The project site is not in an Alquist-Priolo Earthquake Fault Zone; however, the site is in a City of Torrance Fault Hazard Management Zone and a site-specific investigation is required to assess the potential for surface fault rupture hazards that may impact the proposed development.

The CBC contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock onsite, and the strength of ground motion with a specified probability of occurring at the site. The peak ground acceleration onsite with a 2 percent chance of exceedance in 50 years—that is, an average return period of 2,475 years—is 0.72g, where g is the acceleration of gravity. Seismic design parameters pursuant to California Building Code requirements are provided in the geotechnical investigation report (Geocon West 2017).

Project Site

Topography

The southwest part of the site ranges in elevation from approximately 460 feet above mean sea level (amsl) down to approximately 330 feet amsl at the southeast corner of the site. A steep slope remaining from the mining operations, up to 250 feet high, extends across the site generally east west from the southeast corner of the site to the northwest corner. The 5.71acre development area, mostly in the northeast quadrant of the site,

consists of two pads—one approximately 190 to 220 feet amsl and the other approximately 235 to 245 feet amsl. The southeast quadrant of the site gradually slopes eastward toward Hawthorne Boulevard. The northernmost part of the site slopes upward toward single-family homes offsite south of Via Valmonte; that slope is also a mining remnant. Elevations on the northwest site boundary range up to approximately 340 feet amsl (see Figure 4-1, *Topographic Map*).

Geologic Units

Subsurface exploration of the site included 35 borings to depths of up to 120.5 feet below ground surface (bgs).

The site is underlain by the following geologic units mapped on Figure 5.5-3, *Geologic Map*.

Artificial Fill

Artificial fill was encountered to depths between 2 and 80 feet bgs. On the lower pad, the fill is shallowest near the base of the adjacent slopes and increases in thickness towards the central area of the site. On the slopes bounding the proposed development on the northwest (Slope 1) and east-northeast (Slope 2), the fill is approximately 2 to 5.5 feet thick. The artificial fill generally consists of light to dark brown and yellowish-brown sand, silty sand, and clayey sand, with lesser amounts of gravelly sand, sandy silt and clay. The fill contains localized concentrations of concrete, brick, and rock fragments (up to 22 inches in longest dimension) with localized pockets of debris such as wire, PVC pipe, plastic and metal debris. The artificial fill is characterized as slightly moist and loose to medium dense. The fill is the result of backfilling the former mining pit, a process that has been on-going without regulatory agency oversite or permits since the 1960s (Geocon West 2017).

Overburden Soil

Overburden soil was encountered within the upper five feet at the top of the north-facing slope (Slope 3). The overburden soil consists primarily of dry, soft light gray sandy silt with varied amounts of gravel and roots.

Marine Sand

Late Pleistocene age marine sand was encountered below the fill soils (on Slope 2) to a maximum depth of 15 feet. The Pleistocene Epoch extends from about 2.59 million years before present (ybp) to about 11,700 ybp (USGS 2017). The marine sand generally consists of light brown to brown and reddish brown, fine to medium-grained sand, silty sand and sandy silt with lenses of coarse-grained sand and rounded gravel; and is generally massive to horizontally bedded. The marine sand is characterized as dry to slightly moist and loose to dense or firm to hard.

San Pedro Sand

The late Pleistocene age San Pedro Sand underlies the fill on Slope 1, the marine sand on Slope 2, and the proposed building areas on the existing graded pads. The San Pedro Sand ranges from light gray to yellowish brown, fine- to coarse-grained sand that is generally massive to well-bedded, moderately cemented to friable (uncemented) with local gravel-rich beds and some rounded cobbles. The San Pedro Sand is generally massive but locally shows crudely stratified sand beds. The sand is characterized as slightly moist and medium dense to very dense.

Lomita Marl

The mid-Pleistocene age Lomita Marl underlies the San Pedro Sand and is locally exposed on the north-facing slope (Slope 3) along the southern project boundary. The Lomita Marl was not encountered in explorations at the site. However, the Lomita Marl is generally fossiliferous fine-grained sandstone and siltstone that is massive to poorly bedded.

Monterey Formation Bedrock

Sedimentary bedrock of the Valmonte Diatomite member of the Miocene age Monterey Formation was encountered in borings near the southwest site boundary and is exposed on the north-facing slope (Slope 3) along the southern site boundary. The Miocene Epoch extends from approximately 23 million ybp (mybp) to 5.3 mybp (USGS 2010). The Valmonte Diatomite consists of interbedded white diatomaceous siltstone sandstone and brown to yellow brown clayey siltstone. As exposed on Slope 3, the bedrock is predominantly diatomaceous siltstone and sandstone with localized lenses of well-cemented siliceous siltstone, fossiliferous sandstone, and cherty sandstone. The bedrock is thinly bedded with well-developed bedding and ranges from very soft (diatomaceous siltstone and sandstone beds) to medium hard (cherty and siliceous beds). The diatomaceous-rich portion of this formation is reported to be highly porous with low permeability, highly expansive, has poor slope stability, and is not suitable for fill material.

Cross Sections

Two cross sections of subsurface geologic units - one in the west part of the development area (A to A'), and the second in the east part of the development area (B to B') are shown on Figure 5.5-4, *Cross Sections*).

Geologic Hazards

Slope Stability and Landslides

There are no known deep-seated landslides near the site, nor is the site in the path of any known or potential landslides. However, there is a steep north-facing slope (Slope 3) along the southern site boundary. This slope exposes well-bedded diatomaceous siltstone and sandstone of the Valmonte Member of the Monterey Formation and locally some massive to weakly bedded sandstone and siltstone of Pleistocene age Lomita Marl. The slope is in a zone of required investigation for earthquake-induced landslides mapped by the California Geological Survey.

Slopes 1 and 2 (North and Northeast of Lot 1, respectively)

Slopes 1 and 2 range in height from 40 to 80 feet and are inclined at gradients ranging from 1¼:1 to 2:1 (horizontal to vertical). These slopes are underlain by San Pedro Sand and marine sand that are generally homogeneous formations and not considered bedded for the purposes of slope stability evaluation. Stability analyses were conducted for Slope 1 at two locations: cross-section C-C' near the west end of the development area; and cross-section D-D' just east of the midpoint of the slope. Slope 2 would be removed during project development and thus was not analyzed for slope stability.

Slope 3 (South of Lot 1)

Slope 3 ranges from 200 to 250 feet in height. This former quarry slope has been generally graded to a uniform inclination ranging from 48 to 50 degrees (locally up to 60 degrees) and exposes Miocene age sedimentary bedrock of the Monterey Formation. A 50-degree slope is a grade of about 0.84 (horizontal to vertical). The Monterey Formation bedrock is highly fractured and is generally angled in a consistent manner downward to the north. This bedding orientation is favorable with respect to overall stability, generally being inclined more steeply than the slope inclination. Both these conditions are highly stable with respect to overall stability. Also, the bedrock exposed in Slope 3 is soft, highly fractured, and highly weathered. This condition has resulted in areas of continued sloughing and localized rockfalls and some overhanging areas. Areas of debris accumulation (slough) have been designated on the Geologic Map (Figure 5.5-3).

The Monterey Formation bedrock generally consists of siltstone, diatomaceous siltstone and sandstone, and clayey siltstone which are considered relatively impermeable materials and are non-waterbearing. No groundwater or water seepage was observed within the Monterey Formation bedrock. Furthermore, the sloped portion of the site would be dedicated as open space with no appreciable new source of water that could inundate the hillside and thus contribute to slope instability.

Slope Stability Analyses

Three types of slope stability were analyzed: global static stability (relative to gravity; not subject to other forces such as an earthquake); global seismic stability (termed *global pseudo-static stability* in the Geotechnical Investigation Report); and surficial stability. In accordance with the current standard of practice, as outlined in the "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California" and "Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California", factors of safety of 1.5 were used for the static and surficial stability analyses, and 1.0 for the seismic analysis. The methods and findings of the stability analyses are described in more detail in the Geotechnical Investigation Report (see Appendix E1 to this DEIR).

Static Slope Stability

The static slope stability analyses were based on strength parameters for each of the geologic units onsite presented in the Preliminary Geotechnical Investigation Report included as Appendix E1 to this DEIR.

Slope 1

The analyses of global static stability for Slope 1 yielded factors of safety of 1.59 at cross-section C-C' and 1.97 at cross-section D-D'; both factors of safety exceed the required minimum 1.5. Therefore, Slope 1 is considered stable regarding global static stability.

Slope 3

Slope 3 was determined to be stable in terms of global static stability. The methods and findings of the stability analyses are described in more detail in the Geotechnical Investigation Report (see Appendix E1 to this DEIR).

Seismic Slope Stability

The maximum horizontal acceleration used in the seismic stability analysis was 0.48g, where g is the acceleration of gravity. The seismic coefficient – representing lateral forces on slopes and on earth-retaining structures – was 0.24g. The analysis was based on a maximum displacement of five centimeters (two inches) where potential failure planes intersect stiff improvements such as structures.

Slope 1

Slope 1 was found to have factors of safety of 1.09 at cross-section C-C' and 1.33 at cross-section D-D', both greater than the required minimum factor of safety of 1.0. Therefore, Slope 1 is considered stable regarding seismic stability.

Slope 3

The slope stability study determined that Slope 3 is considered stable under gross static and pseudo-static conditions.

Surficial Stability

Surface instability includes debris ("slough") falling, and rockfall.

Slope 1

The factors of safety for surficial stability for Slope 1 were approximately 1.0 at cross-section C-C', and 1.04 at cross-section D-D', each lower than the required minimum factor of safety of 1.5.

Slope 3

The analysis determined that rockfalls could occur on Slope 3. As previously indicated, there is a potential for surficial instability consisting of sloughing and/or rockfall. Localized areas of surficial sloughing were observed during Geocon's geologic mapping of Slope 3 as evidenced by slough accumulation at the toe of the slope.

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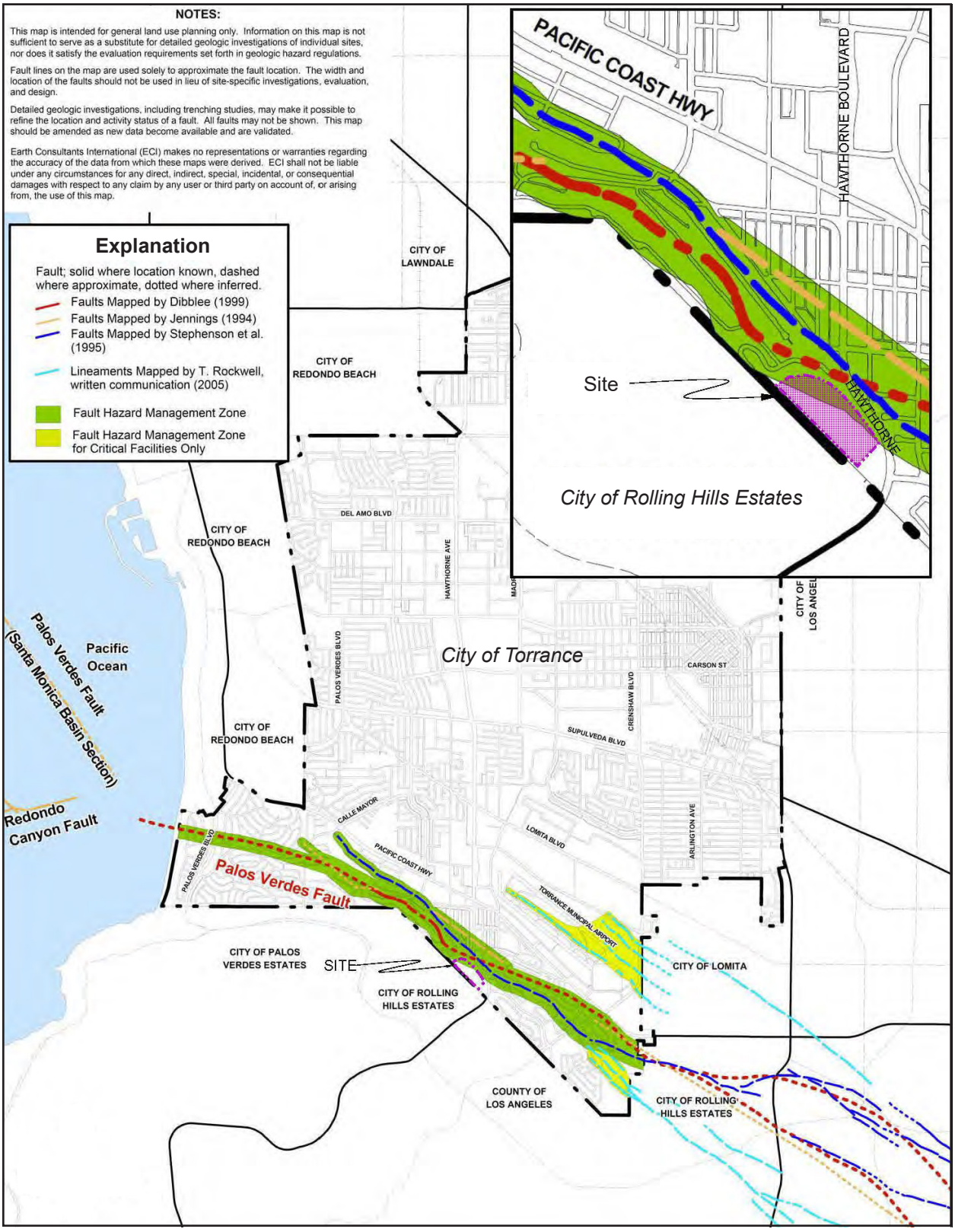
Figure 5.5-1 - Local Fault Map
5. Environmental Analysis



Torrance City Boundary

0 1
Scale (Miles)

Source: Geocon West, Inc., 2016

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GEOLOGY AND SOILS

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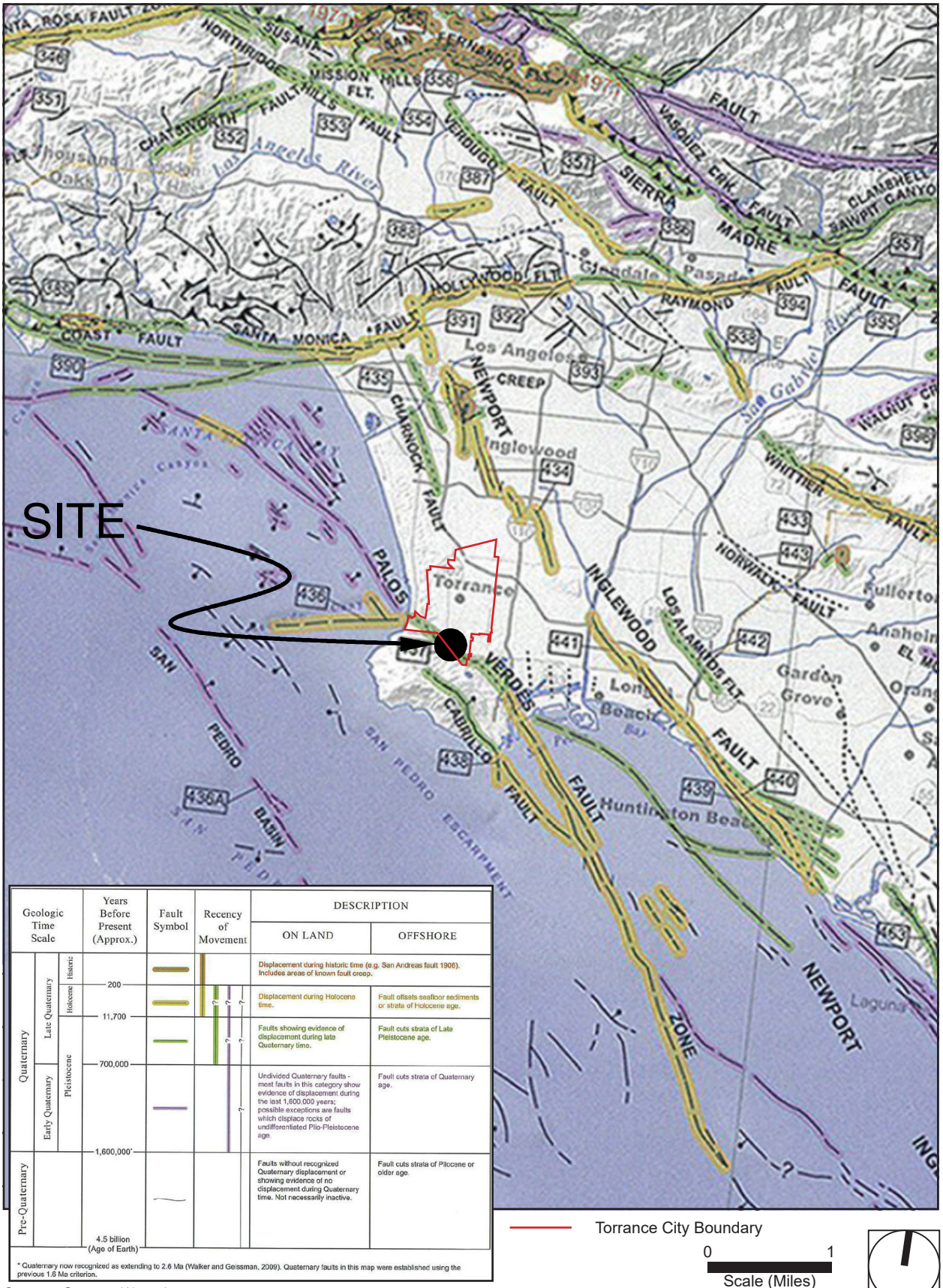
Figure 5.5-2 - Regional Fault Map

5. Environmental Analysis



Geologic Time Scale	Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION: ON LAND	DESCRIPTION: OFFSHORE
Quaternary – Late Quaternary – Historic				Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
Quaternary – Late Quaternary – Holocene	200			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
Quaternary – Late Quaternary – Pleistocene	11,700			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
Quaternary – Early Quaternary – Pleistocene	700,000			Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary	1,600,000*			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
	4.5 billion (Age of Earth)				

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.8 Ma criterion.

Source: Geocon West, Inc., 2017

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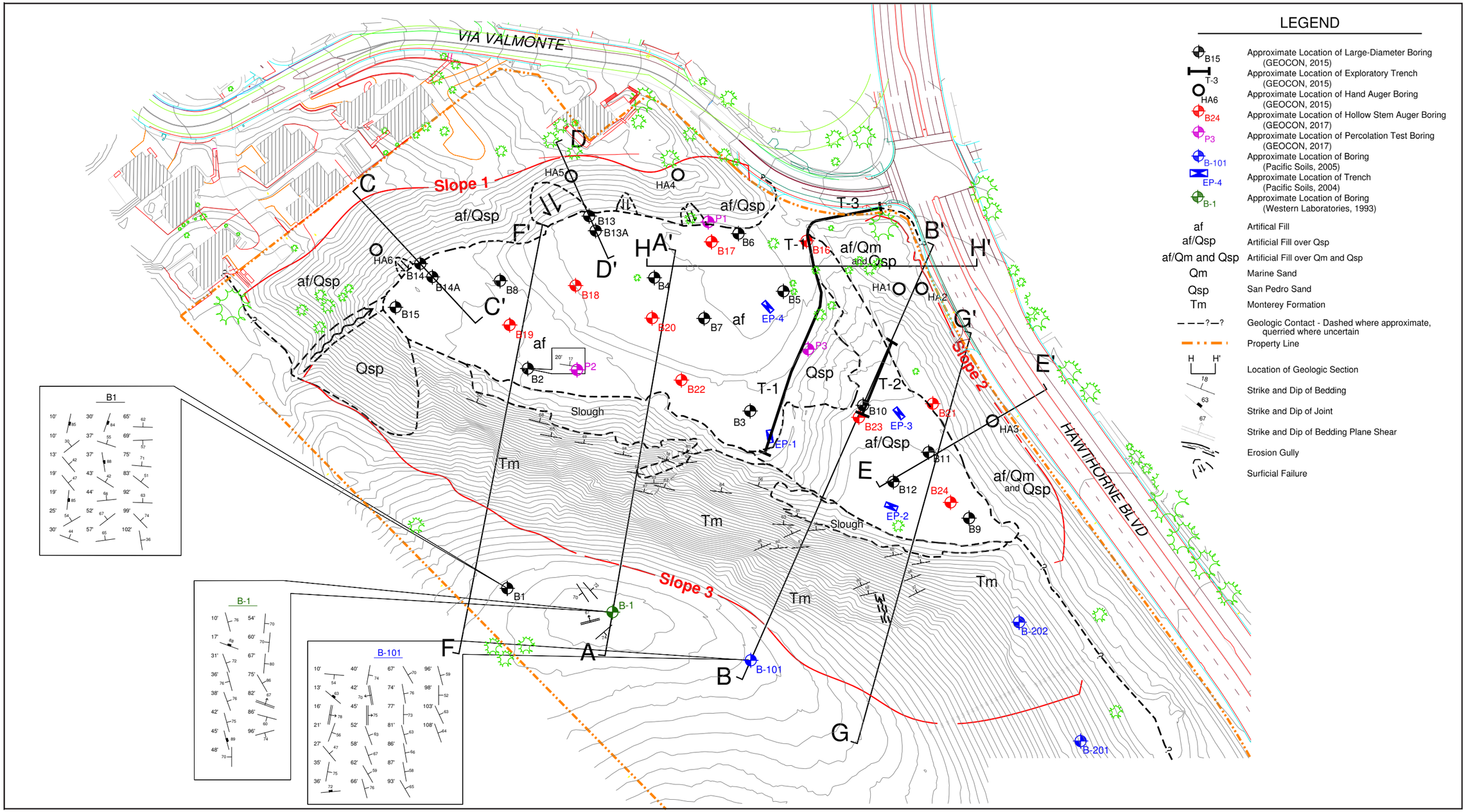
Figure 5.5-3 - Geologic Map
5. Environmental Analysis



Source: Geocon West, Inc., 2017

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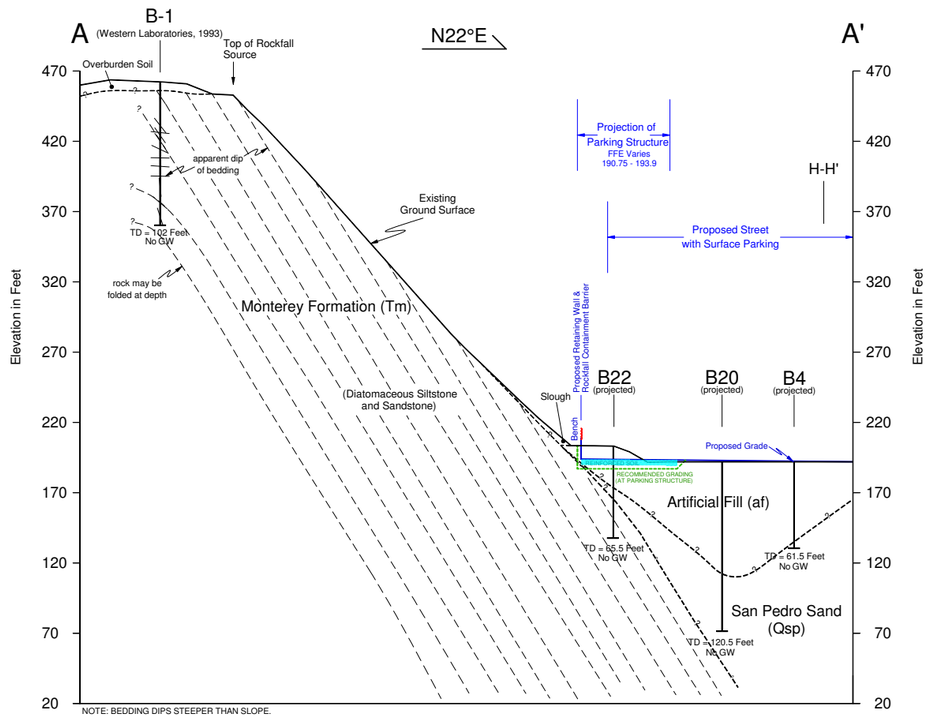
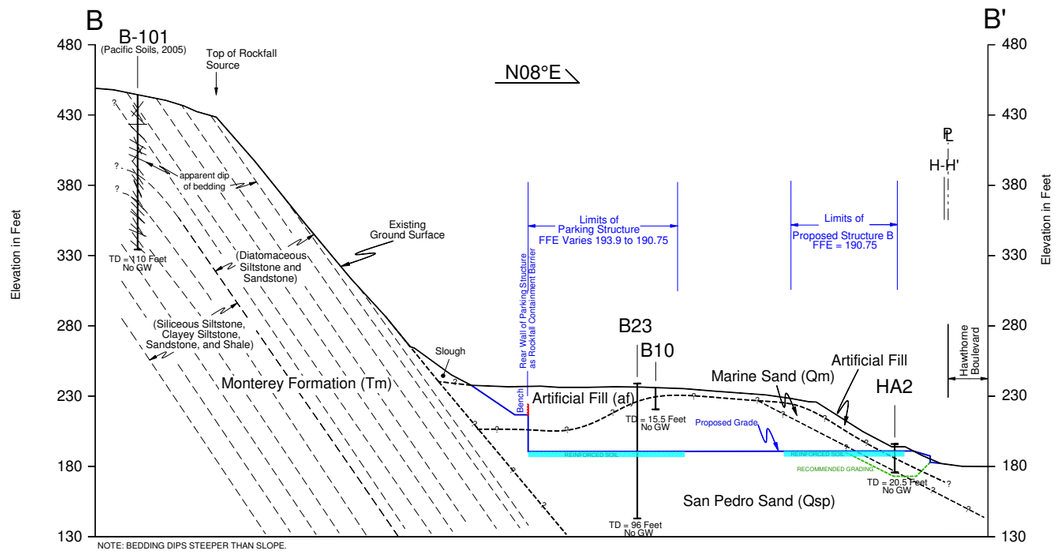
Figure 5.5-4 - Cross_Sections
5. Environmental Analysis





0 100
Scale (Feet)

Source: Geocon West, Inc., 2017

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Collapsible Soils

Collapsible soils shrink upon being wetted and/or being subject to a load. Most of the development area is underlain by artificial fill soil used to backfill the former mine pit. The fill soil was found in borings to depths of up to approximately 80feet during the geotechnical investigation and may extend to greater depths. The geotechnical investigation concluded that the fill soil in its existing condition is not suitable for supporting the proposed structures, but is suitable for removal and subsequent reuse as engineered fill.

Expansive Soil

Expansive soils contain substantial amounts of clay that swells when wetted and shrinks when dried; the swelling or shrinking can shift, crack, or break structures built on such soils. The underlying bedrock at the project site is predominantly diatomaceous siltstone and sandstone with localized lenses of siliceous siltstone, fossiliferous sandstone, and cherty sandstone. The bedrock is thinly bedded with well-developed bedding and ranges from very soft (diatomaceous siltstone and sandstone beds) to medium hard (cherty and siliceous beds). The upper few feet of site soils are considered expansive.

Paleontological Resources

The Paleontological Resources Assessment for the project site consisted of a review of technical reports for the project; a paleontological records search by the Natural History Museum of Los Angeles County; a review of online fossil databases; and a reconnaissance field survey.

Diatomaceous siltstone and sandstone, components of the Monterey Formation, is exposed on Slope 3 and was found in borings near the southwest site boundary. Diatomaceous rock contains remains of diatoms, that is, unicellular algae.

Paleontological Records Search Results

One fossil locality has been recorded from within the bounds of the Project area. Fossil locality LACM 4319 was recorded from sediments of the terrestrial Palos Verdes Sand and interfingering marine San Pedro Sand and yielded specimens of fossil camel (Camelidae) associated with great white shark (*Carcharodon* sp.) and requiem shark (*Carcharhinus* sp.).

On the southern slope of the southern ridge within and immediately south of the Project area, fossil locality LACM 5084 yielded specimens of bonito shark (*Isurus* sp.) from either a marine bed of the Palos Verdes Sand or the San Pedro Sand. Additionally, immediately north of the western-most portion of the Project area, fossil locality LACM 4424 yielded a fossil specimen of sanddab fish (*Citharichthys* sp.) from the Palos Verdes Sand and/or San Pedro Sand, and further southeast of the Project area, south of Winlock Road, fossil locality LACM 3265 yielded fossil specimens of mastodon (*Mammut* sp.) and whale (Cetacea) from the Palos Verdes Sand and/or San Pedro Sand.

Online Database Search Results

Within one mile of the Project site, fossil localities in the San Pedro Sand have yielded northern kelp crab (*Pugettia producta*), school shark (*Galeorhinus* sp.), gray whale (*Eschrichtius robustus*), undetermined whale (Cetacea), and ground sloth (*Nothrotherium shastensis*). Within 10 miles of the project site, fossil localities in older alluvium or Palos Verdes Sand have yielded coral (*Caryophyllia californica*), gastropod (*Acanthina* sp.), crab (*Pyromaia tuberculata*), fish (*Alisea grandis*, Osteichthyes), seal (*Mirounga angustirostris* and Pinnipedia), sea lion (*Eumetopias* sp.), dolphin (Delphinidae), whale (Cetacea), tapir (*Tapirus* [*Helicotapirus*] *haysii*), mammoth (*Mammuthus primigenius*), as well as numerous other invertebrate and vertebrate fossil taxa. Fossils discovered in those formations, as well as in the Monterey Formation, farther from the project site are described in the Paleontological Resources Assessment.

Field Survey Results

Shell fragments and intact bivalve and gastropod (snail) fossils were found in the Monterey Formation and San Pedro Sand. Bivalves are marine mollusks with shells consisting of two hinged parts, such as clams. No significant fossil localities or nonsignificant fossil occurrences were recorded.

Potential to Contain Fossils

The Monterey Formation is considered to have very high potential (PFYC 5) to contain fossils; the San Pedro Sand, older alluvium, and Palos Verdes Sand are all considered to have high potential (PFYC 4)to contain fossils.[1]

5.5.2 Thresholds of Significance

Note that the following thresholds have been revised per the CEQA Guidelines Update approved by the California Office of Administrative Law on December 28, 2018. The revisions include relocating former Threshold C-3 respecting paleontological resources and unique geologic features from the Cultural Resources Section to the Geology and Soils Section as Threshold G-6.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

G-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42.)

[1] Based on the results of an assessment of existing data and the field reconnaissance, the paleontological potential of the geologic units underlying the Project area were assessed with the Bureau of Land Management (BLM) Potential Fossil Yield Classification (PFYC) system (BLM, 2008; 2016). The scale for potential to contain fossils used here is a six-point scale ranging from very low potential (1) to very high potential (5), and where 6 designates unknown potential.

ii) Strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction.

iv) Landslides.

G-2 Result in substantial soil erosion or the loss of topsoil.

G-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

G-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform building Code (1994), creating substantial direct or indirect risks to life or property.

G-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

G-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Thresholds G-1.i, G1.ii, G-3 (liquefaction, lateral spreading, and subsidence), and G-5.

These impacts will not be addressed in the following analysis. Threshold G-2, soil erosion and loss of topsoil, is addressed in Section 5.8, *Hydrology and Water Quality*, of this DEIR and is not addressed here.

5.5.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: Implementation of the Proposed Project could subject residents, visitors and off-site residential uses to landslide hazards. [Threshold G-1.iv]

Impact Analysis:

Slope Stability

There are no known deep-seated landslides near the site, nor is the site in the path of any known or potential landslides. However, a steep north-facing slope (Slope 3) exists along the southern site boundary. This slope exposes well-bedded diatomaceous siltstone and sandstone of the Valmonte Member of the Monterey Formation and locally some massive to weakly bedded calcareous-rich sandstone and siltstone of Pleistocene age Lomita Marl. A review of the State of California Seismic Hazard Zone Map for the Torrance Quadrangle (CDMG, 1999) indicates this slope may have a potential for earthquake-induced landslides. It should be noted that the proposed project would retain Slope 3 in its existing open space state, and no new development would

occur on Slope 3. Surficial stability of slopes 1 and 3 was determined to be lower than the required factor of safety; slope stability analyses are summarized further in Section 5.5.1.2, Existing Conditions, above and are explained further in the Geotechnical Investigation Report (see Appendix E1 to this DEIR).

Four measures for reducing hazards from slope instability to people and structures onsite are recommended in the Geotechnical Investigation Report: setbacks from slopes; rockfall setbacks; retaining walls; and rockfall barriers.

California Building Code Required Setback

The California Building Code (CBC) requires that foundations be sufficiently set back from an ascending or descending slope. The required setback from an ascending slope is 1/2 the height of the ascending slope with a maximum of 15 feet measured horizontally from the exterior face of the structure to the toe of the slope. Where a retaining wall is used, the setback is measured from a projected toe of slope. In lieu of relocating a structure to achieve the setback at the ground surface, foundations may be deepened as necessary to achieve the required setback.

The CBC setback from the development area property line along the south side of the development area next to Slope 3 ranges from approximately 66 feet wide near the west end of Building A to approximately 70 feet wide near the east end of Building A, and from approximately 58 feet wide near the west end of Building C to approximately 32 feet wide near the east end of Building C. The CBC setback along the north side of the development area next to Slope 1 is approximately 24 feet wide near the west end of Building A and approximately 14 feet near the east end of building A (see Figure 3-6, *Site Plan*). Based on the current development plans, the Building Code setbacks will be satisfied for Buildings A, B, and C.

Rockfall Setback

A rockfall setback of 40 horizontal feet, combined with a rockfall catchment area or containment barrier, would be developed along the south side of the development area next to Slope 3. The rockfall setback is narrower than the CBC setback along the south side of Building A; the two setbacks are nearly the same width along the south side of Building C (see Figure 3-6, *Site Plan*). A horizontal setback of 40 feet, when combined with a rockfall catchment area or containment barrier (described below), will be sufficient to retain all potential rockfall.

Retaining Walls/Rockfall Barriers

The site plan includes retaining walls that would extend 11 to 47 feet above grade on the upslope-facing side of the walls. There would be a 7-foot high rockfall barrier wall constructed to the tops of the proposed retaining walls at the base of Slope 3 to mitigate rockfall hazards functioning as a rockfall barrier to stop rolling rocks. Retaining walls would be stabilized with soil nails, that is, metal bars inserted into drilled holes in the slope and then grouted into place.

The part of the rockfall setback upslope from the retaining wall/rockfall barrier would be graded to create a 2.5-foot-wide concrete ditch next to the wall, followed by a nearly level area ("bench") approximately 10 feet

wide to permit access to remove slough. The remaining upslope width of the rockfall setback would be graded to a slope of no more than 2:1 (horizontal: vertical).

The Building Code requires that foundations be sufficiently setback from an ascending or descending slope. The required setback from a descending slope with a steeper than 3:1 and gentler than 1:1 is ⅓ the height of the descending slope with a minimum of 5 feet and a maximum of forty feet measured horizontally from the exterior face of the foundation to the slope face. Where the slope is steeper than 1:1, the slope setback shall be measured from an imaginary line projected at 45 degrees from the toe of the slope upwards. In lieu of relocating a structure to achieve the setback at the ground surface, foundations may be deepened as necessary to achieve the required setback. Based on the latest set of development plans, the Building Code setbacks will be satisfied for Buildings A, B, and C. Retaining Walls and Rockfall Setbacks at Base of Slope 3 (South of Development Area)

South of Building C

The retaining wall/rockfall barrier south of Building C would be approximately 50 feet high total, with the retaining wall extending 47 feet above the finished grade facing the apartment building, and the rockfall barrier extending seven feet above the proposed grade facing the hillside. The retaining wall/barrier would be set back about 11 feet from the exterior wall of the first floor of the building containing a parking garage (see Figure 5.5-5, *Retaining Wall and Rockfall Barrier on Slope 3/Building C*).

Parking Structure (Building D)

On the south side of the parking structure (Building D) the exterior wall of the parking structure would function as both retaining wall and rockfall barrier, and no separate wall or barrier would be built. The hillside slope next to the parking structure wall would be graded as described above (see Figure 5.5-6, *Slope 3/Exterior Parking Structure Wall*).

South of Building A

The retaining wall/rockfall barrier would be about 15.2 feet high, about 13.7 feet of which would be above the finished grade facing the apartment building; and would be set back about 47 feet from the south wall of the Building A (see Figure 5.5-7, *Retaining Wall and Rockfall Barrier on Slope 3/Building A*).

Retaining Walls and Rockfall Setbacks at Base of Slope 1 (North and Northwest of Development Area)

Northwest of Building A

The retaining wall/rockfall barrier would be about 19 feet high – approximately 16 feet of which would be above the finished grade facing the apartment building; and would be set back about 11 feet from the northwest wall of the building (see Figure 5.5-8, *Retaining Wall and Rockfall Barrier on Slope 1/Building A*).

Slope instability hazards would be significant; therefore, a mitigation measure has been provided to reduce such impact to a less than significant level, including the development of setbacks, retaining walls, rockfall barriers, and grading within the rockfall setbacks summarized here and prescribed in further detail in the 2017 Preliminary Geotechnical Investigation report.

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Figure 5.5-5 - Retaining Wall and Rockfall Barrier on Slope 3/Building C
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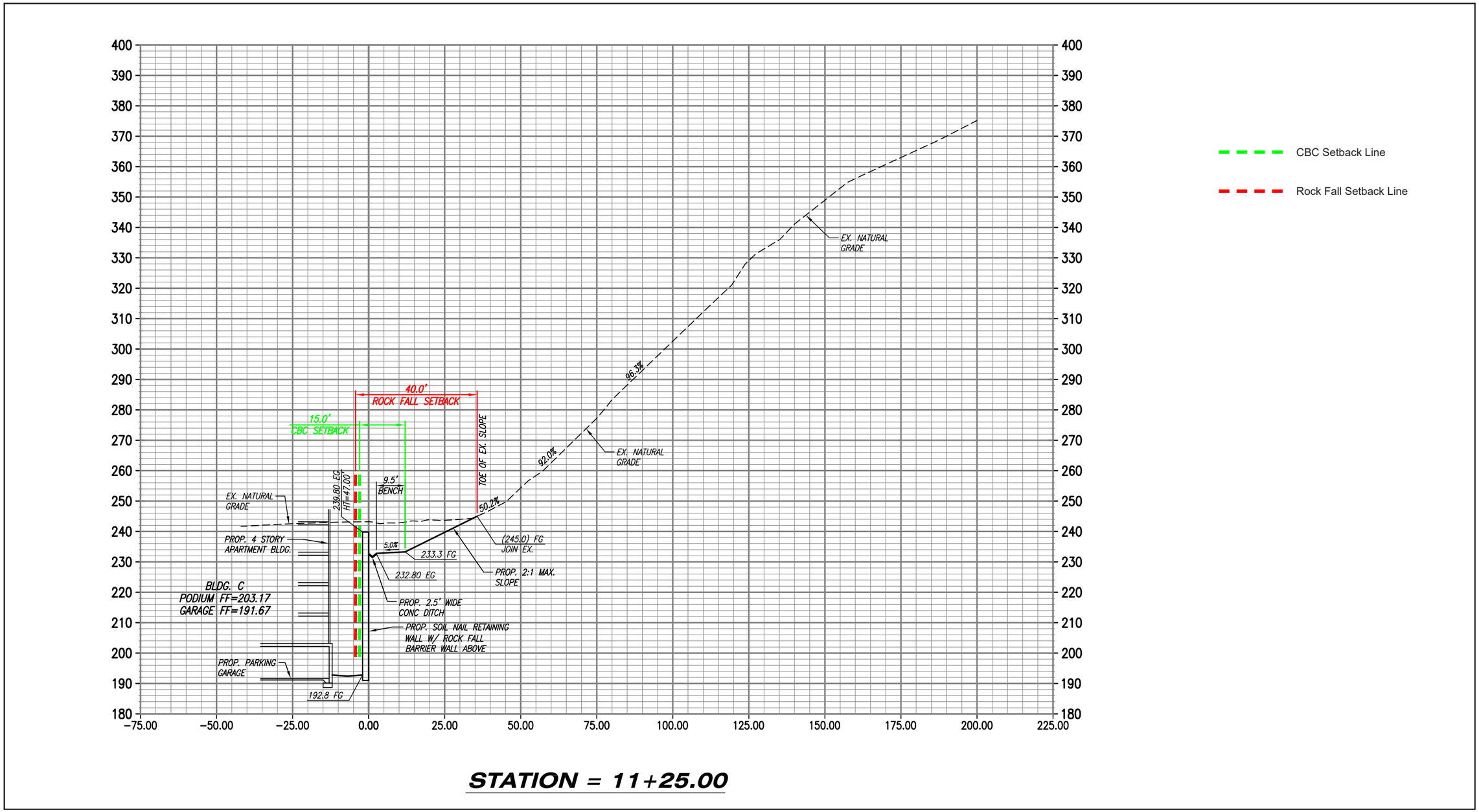

Note: The retaining wall and rockfall barrier diagrammed would be next to the south side of Building C in the southeast part of the development area.

0 35
Scale (Feet)

Source: Withee Malcolm Architects, 2017

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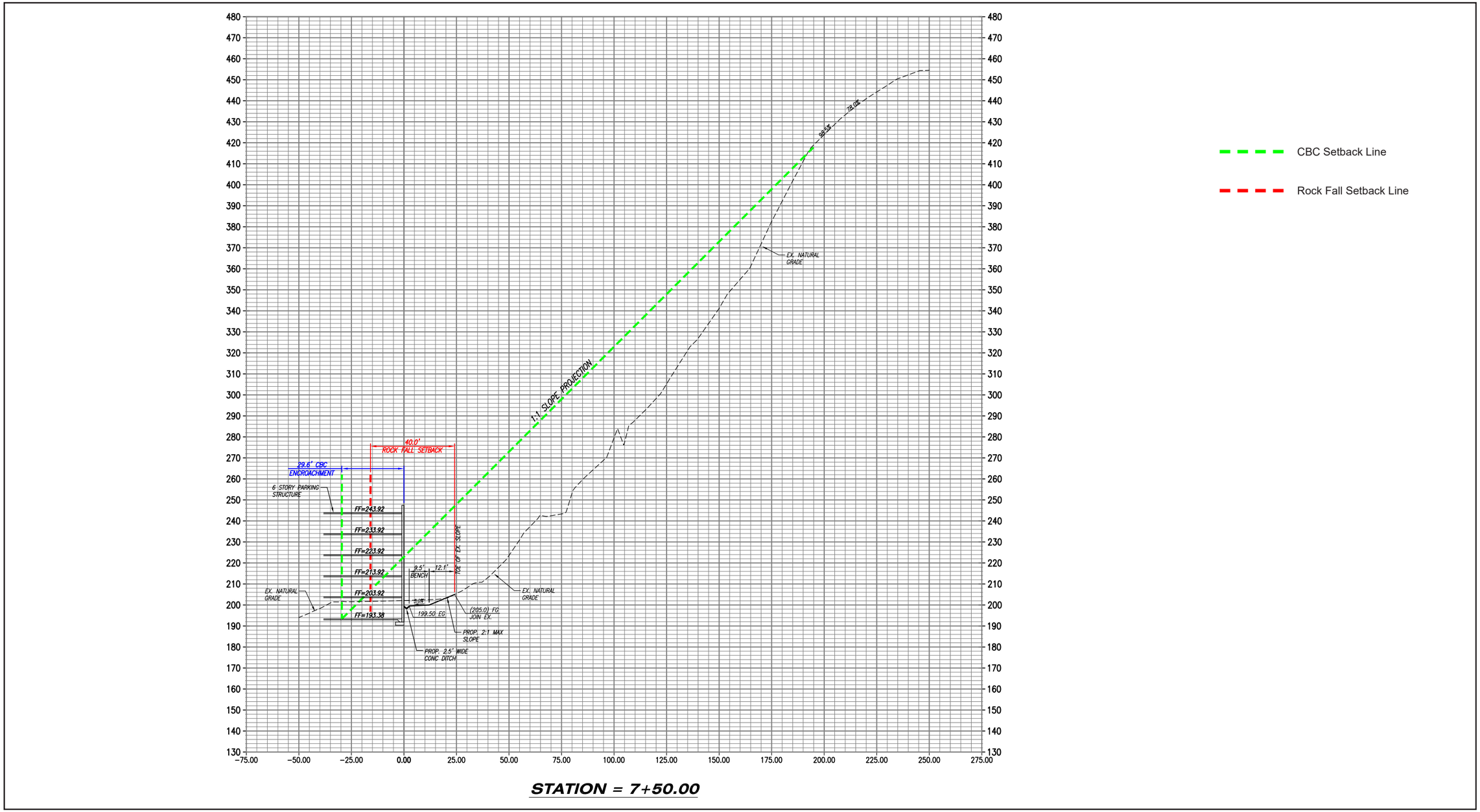
Figure 5.5-6 - Slope 3/Exterior Parking Structure Wall



Note: The retaining wall and rockfall barrier diagrammed would be next to the south side of Building C in the southeast part of the development area.

0 50
Scale (Feet)

Source: KHR Associates, 2017

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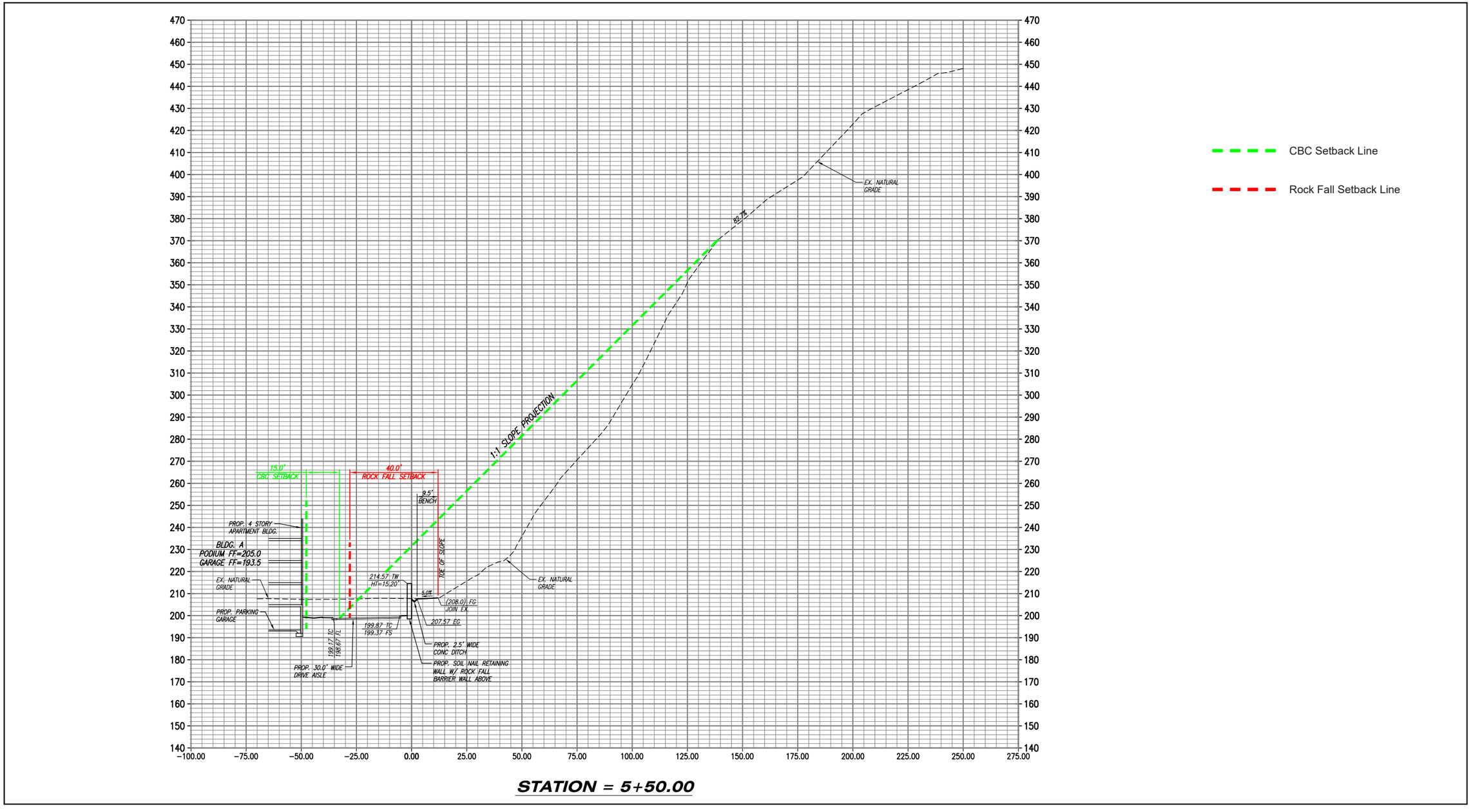
Figure 5.5-7 - Retaining Wall and Rockfall Barrier on Slope 3/Building A



Note: The retaining wall and rockfall barrier diagrammed would be next to the south side of Building C in the southeast part of the development area.

0 40
Scale (Feet)

Source: KHR Associates, 2017

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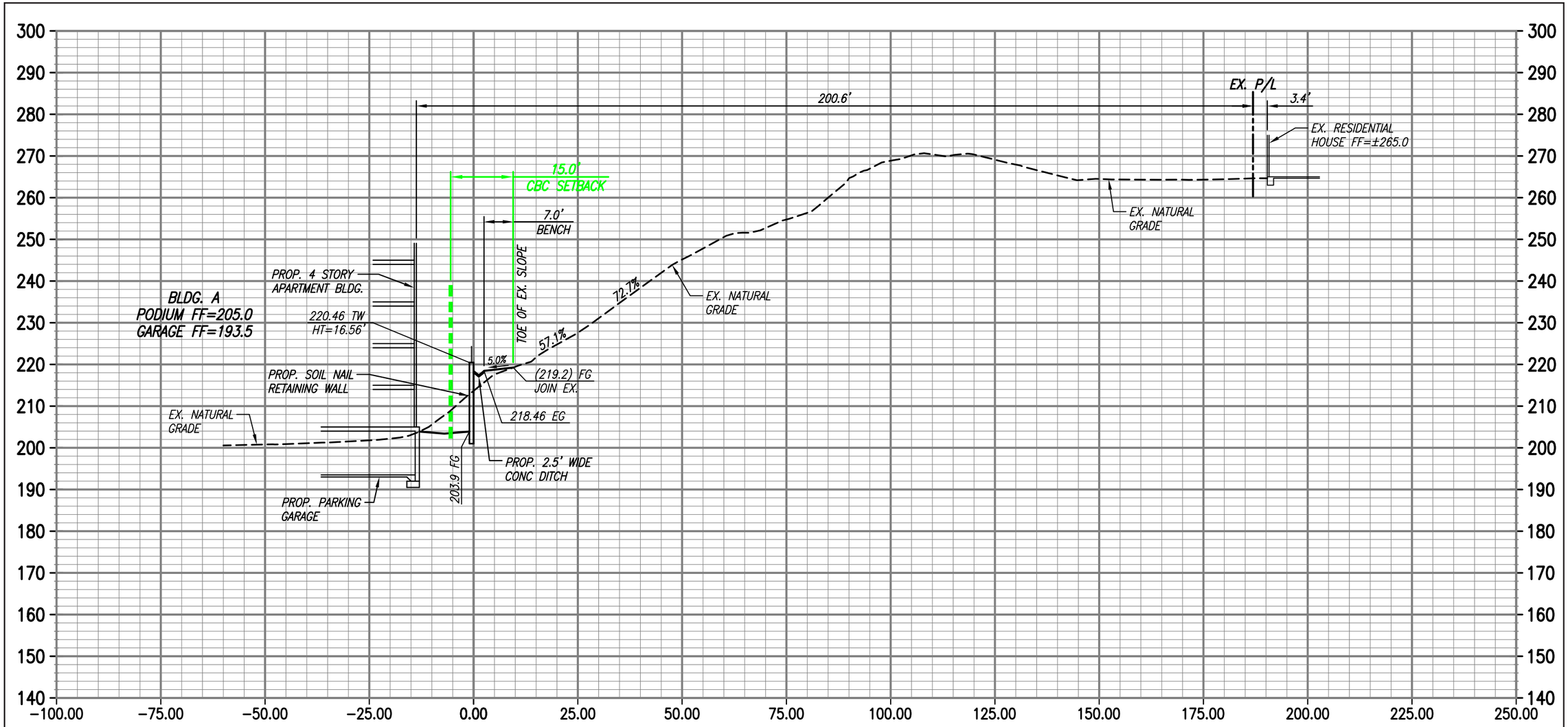
Figure 5.5-8 - Retaining Wall and Rockfall Barrier on Slope 1/Building A
5. Environmental Analysis



Note: The retaining wall and rockfall barrier diagrammed would be next to the south side of Building C in the southeast part of the development area.

0 50
Scale (Feet)

Source: KHR Associates, 2017

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Impact 5.5-2 Minor shears observed in site sediments could be subject to some slip during a future earthquake. [Threshold G-3]

Impact Analysis: Minor shearing—that is, deformation in rock—onsite due to either folding of the Palos Verdes Hills or past earthquakes in the region was observed in the San Pedro Sand. The shears are not considered active faults; however, the shears could be subject to small slips during future earthquakes. The Preliminary Geotechnical Investigation report contains recommendations for foundation design to minimize hazards from such slips to people and structures (Geocon West 2017). Mitigation measure GEO-1 would ensure the recommendations of the geotechnical report are fully implemented so that impacts would be less than significant.

Impact 5.5-3: Some of the artificial fill soil onsite is unsuitable for supporting the proposed structures. [Threshold G-3]

Impact Analysis: Some of the artificial fill soils onsite were determined to be unsuitable for supporting the proposed structures. The fill soil was placed during unpermitted backfilling of the former mining pit, ongoing since the 1960's. The fill contains localized concentrations of concrete, brick, and rock fragments with localized pockets of debris. Based on the Geocon West geotechnical investigation, Lot 1 would be graded to the following pad elevations:

- Buildings A and B – The finished floor elevation will range from 190.5 to 193.5 feet amsl. Existing artificial fill will be excavated to an elevation of approximately 173 to 177 feet amsl and properly compacted for support of the reinforced engineered fill blanked and proposed foundation.
- Building C – The finished floor elevation will be 191.67 feet amsl. San Pedro Sand is present in this area, requiring removal of this native material to bring elevations to the finished floor elevation. The San Pedro Sand is considered suitable for direct support of the reinforced engineered fill blanket and proposed foundation system.
- Parking Structure – The finished floor elevations vary between 190.75 and 193.9 feet MSL beneath the proposed structure. Both artificial fill and San Pedro Sand are present in this area, therefore existing artificial fill will be excavated to an elevation of approximately 187 feet MSL and properly compacted for support of the reinforced engineered fill blanket, and proposed foundation. Where competent San Pedro Sand is exposed at the excavation bottom, it is considered suitable and will not require excavation to an elevation of 187 feet MSL.

As described above, Lot 1 is not balanced and will require a net export of 119,270 CY of soil. In addition, a 4-foot layer of clean fill will be placed across the entire Lot 1. It is anticipated that this fill material will consist of the competent native materials excavated to obtain the above-referenced pad elevations associated with development activities.

The geotechnical investigation report recommends placement of a layer of engineered fill reinforced with geosynthetic materials as addressed by mitigation measure GEO-1. The Preliminary Geotechnical Investigation report also recommends removal of artificial fill to specific elevations under the sites of the proposed buildings as addressed by mitigation measures GEO-2 through GEO-5. Grading is currently estimated to involve 120,915

cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. As such, the additional 10 percent excavation buffer (which would equate to 11,927 CY) specified in the Geocon letter regarding "Suggested Contingency Factor for Estimation of Soil Excavation during Grading" (Geocon 2018b) would be balanced on site and would not be exported off site. Impacts would be less than significant after implementation of mitigation measures identified in this DEIR.

Impact 5.5-4: Shallow soils onsite are considered expansive; thus, project development could cause hazards to people or structures. [Threshold G-4]

Impact Analysis: The upper few feet of site soils are considered expansive based on the underlying bedrock and would therefore need to be removed from under the proposed buildings and other improvements. In addition, as a conservative measure, the recommendations for design of foundations and slabs assume that those improvements would be built on expansive soils even after removal of shallow soils. Implementation of such recommendations included as mitigation measure GEO-6 would minimize consequent hazards to less than significant.

Impact 5.5-5: The proposed project could destroy paleontological resources. There are no unique geological features onsite, and project development would not destroy such a feature. [Threshold G-6]

There are no unique geological features onsite; the slopes onsite are remnants from past mining operations and not natural features.

Native rock and soils on and under the site have very high to high potential to contain fossils; numerous fossil discoveries within 10 miles of the project site are described above in Section 5.5.1.2. However, most of the soils that would be disturbed by project development are artificial fill soils. The preparation and/or engineering of the fill soils before the soils were placed onsite is unknown as permits were not obtained prior to depositing of the artificial fill; however, it is expected that most fossils that may have been in the soils would have been destroyed by preparation, placement, or both. Thus, fill soils are considered to have low sensitivity for fossils. Project development would involve disturbance of some native soils and rock that may contain fossils. Mitigation measure GEO-7 would ensure that any paleontological discovery would be dealt with in a manner as to protect any resource encountered during project implementation. Upon implementation of mitigation, impacts would be less than significant.

5.5.4 Cumulative Impacts

Geologic Hazards

Geology and soils impacts are generally site-specific and do not combine with impacts of other projects to result in cumulative impacts. Other projects proposing certain types of structures, and/or tentative or final maps, would be required to have geotechnical investigations of their project sites conducted. Other projects would be required to comply with provisions of state law and regulations safeguarding against seismic hazards and other geologic hazards, including the CBC, the Alquist-Priolo Earthquake Fault Zoning Act, the Torrance

Fault Hazard Management Zone, and the Seismic Hazard Mapping Act. Cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

Paleontological Resources

The area considered for cumulative impacts to paleontological resources is the Palos Verdes Hills plus the southern half of the Los Angeles Basin.[2] The geologic units exposed onsite have produced myriad and very diverse fossil specimens in California, as described in the Paleontological Resources Assessment. Other projects would involve ground disturbance which could destroy fossils. Other projects would be subject to independent CEQA review including assessment of impacts to paleontological resources and implementation of all feasible mitigation measures for any significant impacts identified. Cumulative impacts would therefore be less than significant, and project impacts would not be cumulatively considerable.

5.5.5 Existing Regulations and Standard Conditions

State

- California Public Resources Code Sections 2621 et seq.: Alquist-Priolo Earthquake Fault Zoning Act
- California Public Resources Code Section 2695: Seismic Hazard Mapping Act
- California Code of Regulations Title 24, Part 2: 2013 California Building Code
- California Health and Safety Code Sections 17953-17955: Requirements for Geotechnical Investigations

5.5.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be **potentially significant:**

- **Impact 5.5-1**: Implementation of the Proposed Project could subject residents, and visitors and off-site residential uses could be subject to landslide hazards.
- **Impact 5.5-2** Minor shears observed in site sediments could be subject to slip during an earthquake
- **Impact 5.5-3** Artificial fill soils onsite are unsuitable for supporting the proposed structures.
- **Impact 5.5-4** Expansive shallow soils onsite could cause hazards to people or structures through project development
- **Impact 5.5-5** The proposed project could destroy paleontological resources.

5.5.7 Mitigation Measures

Impact 5.5-1 and 5.5-2

GEO-1 The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West,

[2] The northern half of the Los Angeles Basin is excluded from this region because it includes the La Brea Tar Pits, one of the richest localities for ice-age fossils in the world, and tar pits are not characteristic of the project region.

Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1).

The proposed structures shall be supported on a layer of engineered fill reinforced with geosynthetic materials in order to provide a ductile sublayer that can accommodate earthquake-induced ground displacement and minimize transfer of the displacements to the structures. Artificial fill may be re-used as engineered fill subject to compliance with grading recommendations in the geotechnical investigation report, including but not limited to:

Pockets of trash and debris may be encountered within the deeper artificial fill. If encountered, the trash and debris should be exported from the site and should not be mixed with the fill soils. Generation of oversized material (greater than 8 inches) should be anticipated. Rocks larger than 8 inches but less than 4 feet in maximum dimension may be incorporated into the engineered fill. Placement of oversized material (larger than 8 inches) shall be limited to the area measured at least 15 feet horizontally from the nearest slope face and 10 feet below finish grade or 3 feet below the deepest utility, whichever is deeper. It is recommended that where non-building areas are available, placement of oversized material should be performed in these areas. All materials utilized as engineered fill should be well-blended to create a uniform fill material prior to placement and compaction within each building pad area or slope construction. Soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.).

Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein.

During grading operations, the Geotechnical Engineer (a representative of Geocon) should be onsite to observe that soil and geologic conditions do not differ significantly from those expected. If conditions are found to be variable, modification to the grading recommendations described herein should be implemented based on onsite observations. This may include deeper excavations to remove artificial fill or unsuitable soils, or reducing excavations where competent soil is encountered at shallower depths than anticipated.

The structures shall be decoupled from the reinforced engineered fill blanket through the placement of a double layer of polyolefin sheets sandwiched between layers of clean sand,

placed immediately below the mat foundation.[3] The preliminary design includes a four-foot blanket of engineered fill with geogrid reinforcement at one-foot intervals; the thickness and number of geogrid layers to be refined during final project design. Geogrids are typically made of plastic; they can be in the form of a grid or a fabric. This procedure should be continued until four layers of geosynthetic reinforcement and 4 feet of engineered fill have been placed. The double layer of polyolefin sheets sandwiched between layers of clean sand should be placed immediately above the reinforced engineered fill blanket and immediately below the mat foundation. The geosynthetic reinforcement should extend laterally a minimum distance of 5 feet beyond the building footprint areas. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

Impact 5.5-3

The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1).

The following mitigation measures would address the geotechnical investigation's recommendations to remove artificial fill soils to appropriate depths to adequately support the proposed structures. The following specified depths are draft measurements subject to change pending final design parameters. Equivalent depths to support final project plans may be adapted and approved by the site soils engineer pending further investigation and final design.

GEO-2 **Building A:** Artificial fill should be removed to 177 feet amsl. Competent San Pedro Sand above 177 feet elevation amsl would not require excavation. The finished floor elevation would be 193.5 feet amsl, 16.5 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

GEO-3 **Building B:** Artificial fill should be removed to 173 feet amsl. Competent marine sand or San Pedro Sand above 173 feet amsl would not require removal. The finished floor elevation would be 190.5 feet amsl, 17.5 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

GEO-4 **Building C**: San Pedro Sand – considered suitable for supporting the proposed building – is expected to be exposed at the pad subgrade, which would be at approximately 185 feet amsl. The finished floor would be 191.67 feet amsl, or about 6.67 feet above the subgrade. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

[3] Polyolefins include several common types of plastics, including polyethylene and polypropylene.

GEO-5 **Parking Structure:** It is expected that artificial fill and San Pedro Sand would be exposed at the pad subgrade. It is recommended that artificial fill be removed to an elevation of about 187 feet amsl; San Pedro Sand would not require removal. The finished floor would be approximately 193 ft amsl at least 6 feet above the recommended removal depth. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

Impact 5.5-4

GEO-6 The proposed project shall be constructed in accordance with the geotechnical engineering recommendations as presented in the *Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.* Geocon West, Inc., June 30, 2017, as well as any subsequent documents, including responses to City comments. These recommendations address site preparation, excavation, fill placement and compaction, foundation design, and site drainage, among other topics, as summarized below (full recommendations are included in Appendix E1).

Project grading would comply with recommendations of the geotechnical investigation (Geocon West 2017) to remove the upper few feet of expansive soils, and foundations and slabs shall be designed to be built upon expansive soils following the removal of shallow soils. The limits of existing fill and/or soft soil removal will be verified by the Geocon representative during site grading activities. During grading operations, the Geotechnical Engineer (a representative of Geocon) should be onsite to observe that soil and geologic conditions do not differ significantly from those expected. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

Impact 5.5-5

GEO-7 The project applicant shall retain a qualified paleontologist to monitor ground-disturbing activities in native San Pedro Sand, Lomita Marl, and Monterey Formation rock. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils could be encountered. The paleontologist shall determine, based on consultation with the City, when monitoring of grading activities is needed based on the onsite soils and final grading plans. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earthmoving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of San Pedro Sand, Lomita Marl, and Monterey Formation rock shall be collected as necessary for

processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the City of Torrance Planning Division. Mitigation shall follow recommendations set forth in the 2017 Revised Geotechnical Investigation report.

5.5.8 Level of Significance After Mitigation

Impact 5.5-1

With implementation of GEO-1, the measures outlined regarding fill soils to address slope instability hazards would ensure that impacts would be less than significant.

Impact 5.5-2

With implementation of GEO-1, the measures outlined regarding fill soils to address minor shears observed in site sediments that could be subject to slip during an earthquake would ensure that impacts would be less than significant.

Impact 5.5-3

With implementation of GEO-2 through GEO-5, in addition to GEO-1, project implementation would remove artificial fill soils to appropriate depths to adequately support the proposed structures to depths specified or equivalent by the recommendation of the site soils engineer. Impacts would be less than significant.

Impact 5.5-4

With implementation of GEO-6, the removal of surface soils and adhering to expansive soil design considerations would ensure that expansive shallow soils onsite would not cause hazards to people or structures through project development. Impacts would be less than significant.

Impact 5.5-5

With implementation of GEO-7, monitoring for paleontological resources during grading and project implementation would ensure that the proposed project would not impact paleontological resources. Impacts would be less than significant.

Upon implementation of the proposed mitigation measures, impacts to geological resources would be less than significant.

5.5.9 References

Geocon West, Inc. 2016, January 21.Fault Rupture Hazard Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.

———. 2017, June 30. Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Hawthorne Boulevard and Via Valmonte, Torrance, California.

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Torrance, City of. 2010, April 6 (adopted). City of Torrance General Plan. https://www.torranceca.gov/our-city/community-development/general-plan/plan-2009.

US Geological Survey (USGS). 2010, July 19. Divisions of Geologic Time. https://pubs.usgs.gov/fs/2010/3059/pdf/FS10-3059.pdf.

5.6 GREENHOUSE GAS EMISSIONS

This section of the DEIR evaluates the potential for implementation of the proposed project to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single project is large enough to result in a measurable increase in global concentrations of GHG, climate change impacts of a project are considered on a cumulative basis. The analysis is based in part on the *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Solana Torrance Project* prepared by Dudek, which is included in Appendix B of this DEIR.

5.6.1 Environmental Setting

5.6.1.1 CLIMATE CHANGE OVERVIEW

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process: Short-wave radiation emitted by the sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and is the most significant driver of observed climate change (IPCC 2013; EPA 2017a). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further below under *Potential Effects of Climate Change*.

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Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

- **Carbon Dioxide (CO_2)** is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

- **Methane (CH_4)** is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

- **Nitrous Oxide (N_2O)** is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

- **Fluorinated Gases** (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include:

    - ***Hydrofluorocarbons (HFCs)*** are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving

[1] Climate forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code Section 38505, because impacts associated with other climate forcing substances are not evaluated herein.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's Second Assessment Report and Fourth Assessment Report (IPCC 1995; Dudek 2019), CARB's Glossary of Terms Used in GHG Inventories (2015), and EPA's Glossary of Climate Change Terms (2016e).

many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.

- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- *Sulfur Hexafluoride (SF_6)* is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- *Nitrogen Trifluoride (NF_3)* is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016). The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (version 2016.3.2) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (Dudek 2019). The GWP values identified in CalEEMod were applied to the project.

Greenhouse Gas Inventories and Climate Change Conditions

Sources of Greenhouse Gas Emissions

Per the United States Environmental Protection Agency's (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015, total United States GHG emissions were approximately 6,586.7 million MT CO_2e (MMT CO_2e) in 2015 (EPA 2017c). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 82.2 percent of total GHG emissions (5,411.4 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.3 percent of CO_2 emissions in 2015 (5,049.8 MMT CO_2e). Relative to 1990, gross U.S. GHG emissions in

2015 are higher by 3.5 percent—down from a high of 15.5 percent above 1990 levels in 2007. GHG emissions decreased from 2014 to 2015 by 2.3 percent (153.0 MMT CO_2e) and overall, net emissions in 2015 were 11.5 percent below 2005 levels (EPA 2017c).

According to California's 2000–2015 GHG emissions inventory (2017 edition), California emitted 440.36 MMT CO_2e in 2015, including emissions resulting from out-of-state electrical generation (CARB 2017c). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2015 are presented in Table 5.6-1, *GHG Emissions Sources in California.*

Table 5.6-1 GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[1]
Transportation	164.63	37%
Industrial[2]	91.71	21%
Electric power[3]	83.67	19%
Commercial and residential	37.92	9%
Agriculture	34.65	8%
High global-warming potential substances	19.05	4%
Recycling and waste	8.73	2%
Total	**440.36**	**100%**

Source: Appendix B.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent per year.
Emissions reflect the 2015 California GHG inventory.
1 Percentage of total has been rounded, and total may not sum due to rounding.
2 The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.52 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
3 Includes emissions associated with imported electricity, which account for 33.74 MMT CO_2e annually.

During the 2000 to 2015 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 MT per person to 11.3 MT per person in 2015, representing a 19 percent decrease. In addition, total GHG emissions in 2015 were approximately 1.5 MMT CO_2e less than 2014 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California is on track to meet the 2020 target of 431 MMT CO_2e (CARB 2017c).

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 Intergovernmental Panel on Climate Change Synthesis Report (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2006). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights. Shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year. Sea levels have risen, and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). Experts predict a decline of 30 percent to 90 percent in Sierra Nevada snowpack, which accounts for approximately half of the surface water storage in California, over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late twenty-first century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10 percent below the historical average (CCCC 2012).

The following is a summary of current and future climate change impacts to resource areas in California, as discussed in Safeguarding California: Reducing Climate Risk (CNRA 2014).

Agriculture

Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased

risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.

Biodiversity and Habitat

Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss has occurs).

Energy

Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea level rise.

Forestry

The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions.

Ocean and Coastal Ecosystems and Resources

Sea level rise, changing ocean conditions, and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise, in addition to more frequent and severe coastal storms and erosion, is threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities, as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands.

Public Health

Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves are likely to increase the risk of mortality due to heat-related illness as well as exacerbating existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illnesses such as asthma and allergies.

Transportation

While the transportation industry is a source of GHG emissions, it is also vulnerable to climate change risks. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to increased pressure and pavement

buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of peoples and goods or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water

Climate change could seriously impact the timing, form, and amount of precipitation; runoff patterns; and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the wintertime. Increased risk of flooding can lead to a variety of public health concerns, including concerns related to water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality.

In March 2016, the California Natural Resources Agency (CNRA) released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, in May 2017, CNRA released the draft Safeguarding California Plan: 2017 Update, which is a survey of current programmatic responses for climate change and contains recommendations for further actions (CNRA 2017).

In January 2018, CNRA released Safeguarding California Plan: 2018 Update, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming.

5.6.1.2 REGULATORY BACKGROUND

Federal, state, and local laws, regulations, plans, or guidelines that are related to greenhouse gas emissions and applicable to the proposed project are summarized below.

Federal Regulations

Massachusetts v. EPA.

In Massachusetts v. EPA (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be

anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."

- The Administrator further found the combined emissions of GHGs—CO_2, CH4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007.

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.

- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards.

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light- duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (EPA 2010).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on

an average industry fleet- wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

Clean Power Plan and New Source Performance Standards for Electric Generating Units.

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel- fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits.

State Regulations

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

The state has taken a number of actions to address climate change. These include executive orders, legislation, and California Air Resources Board (CARB) plans and requirements. These are summarized below.

Executive Order S-3-05

Executive Order S-3-05 (June 2005) (EO S-3-05) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- 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 Order S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010 (CAT 2016).

Assembly Bill 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill 32 (AB 32) (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

Senate Bill 32 and Assembly Bill 197

Senate Bill 32 (SB 32) and AB 197 (enacted in 2016) are companion bills. Senate Bill 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. Assembly Bill 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. Assembly Bill 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

CARB's 2007 Statewide Limit

In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 MMT CO_2e).

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The Climate Change Scoping Plan: A Framework for Change (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
2. Achieving a statewide renewable energy mix of 33 percent.
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
4. Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets.
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS; 17 Cal. Code Regs., Section 95480 et seq.).
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15 percent from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05 and EO B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including: energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies. As part of the First

Update, CARB recalculated the state's 1990 emissions level, using more recent global warming potentials identified by the Intergovernmental Panel on Climate Change, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of Senate Bill 32 (SB 32) (Pavley, Chapter 249, Statutes of 2016).

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (2030 Scoping Plan) for public review and comment (CARB 2017a). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' known commitments include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the LCFS, measures identified in the Mobile Source and Freight Strategies, measures identified in the Final Proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and- Trade Program and a measure to reduce GHGs from refineries by 20 percent.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15 percent reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Under 2 MOU and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below 2°C (UNFCCC 2016). The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through CAPs) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project level review where there is a legally adequate CAP.[3] On December 14, 2017, CARB's Governing Board approved the Second Update.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with every planning policy or goal to be consistent. A project would be consistent if it would further the objectives and not obstruct their attainment.

[3] Sierra Club v. County of Napa (2004) 121 Cal.App.4th 1490; San Francisco Tomorrow et al. v. City and County of San Francisco (2015) 229 Cal.App.4th 498; San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco (2002) 102 Cal.App.4th 656; Sequoyah Hills Homeowners Assn. V. City of Oakland (1993) 23 Cal.App.4th 704, 719.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (40 CFR, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009, July 12, 2010, September 22, 2010, October 28, 2010,

November 30, 2010, December 17, 2010, and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

Executive Order B-18-12

Executive Order B-18-12 (EO B-18-12) (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10 percent by 2015 and 20 percent by 2020, as measured against a 2010 baseline. Executive Order B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

Executive Order B-30-15

Executive Order B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. Executive Order B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Senate Bill 605 and Senate Bill 1383

Senate Bill 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) in the state; and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. Senate Bill 1383 also establishes specific targets for the reduction of SLCPs (40

percent below 2013 levels by 2030 for methane and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon) and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Final Proposed Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017 (CARB 2017b). The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, methane, and fluorinated gases.

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402(b)(1)). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402(d)) and cost effectiveness (California Public Resources Code, Sections 25402(b)(2) and (b)(3)). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2016 Title 24 building energy efficiency standards, which became effective January 1, 2017. The updated standards will further reduce energy used and associated GHG emissions compared to previous standards, such as the 2013 Title 24 standards. In general, single-family homes built to the 2016 standards are anticipated to use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5 percent less energy than those built to the 2013 standards (CEC 2015a, 2015b).

The 2019 Building Energy Efficiency Standards, which were recently adopted on May 9, 2018, become effective starting January 1, 2020. The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground- up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective January 1, 2017. The mandatory standards require the following (24 CCR, Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65 percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 80 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) performance for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030.[4]

[4] See, e.g., CPUC 2013. It is expected that achievement of the ZNE goal will occur via revisions to the Title 24 standards.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Senate Bill 1

Senate Bill 1 (Murray) (August 2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. Senate Bill 1 added sections to the California Public Resources Code, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption and placing solar energy systems on 50 percent of new homes within 13 years of adoption. Senate Bill 1, also termed "Go Solar California," was previously titled "Million Solar Roofs."

Assembly Bill 1470 (Solar Water Heating)

This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill defines several terms for purposes of the act. The bill requires the commission to evaluate the data available from a specified pilot program, and, if it makes a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

Renewable Energy and Energy Procurement

Senate Bill 1078

Senate Bill 1078 (Sher) (September 2002) established the Renewables Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and S-21-09).

Senate Bill 1368

Senate Bill 1368 (September 2006), required CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by CPUC.

Assembly Bill 1109

Enacted in 2007, AB 1109 required CEC to adopt minimum energy efficiency standards for general-purpose lighting, to reduce electricity consumption 50 percent for indoor residential lighting and 25 percent for indoor commercial lighting.

Executive Order S-14-08

Executive Order S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California serve 33 percent of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The CNRA, through collaboration with CEC and the California Department of Fish and Game (now the California Department of Fish and Wildlife), was directed to lead this effort.

Executive Order S-21-09 and Senate Bill X1-2

Executive Order S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. The CARB was further directed to work with CPUC and CEC to ensure that the regulation builds upon the RPS program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, statutes of 2011) signed by Governor Brown in April 2011.

Senate Bill X1-2 expanded the RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

Senate Bill X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor- owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals listed above.

Senate Bill 350

Senate Bill 350 (October 2015) further expanded the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires CPUC, in consultation with CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Mobile Sources

AB 1493

Assembly Bill 1493 (Pavley) (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent.

Heavy Duty Diesel

The California Air Resources Board adopted the final Heavy-Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014 to reduce PM and NO_X emissions from heavy-duty diesel vehicles. The rule requires PM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. California Air Resources Board also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

Executive Order S-1-07

Executive Order S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining LCFS for GHG emissions measured in CO2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020 (17

CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

Senate Bill 375

Senate Bill 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Senate Bill 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. Senate Bill 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a sustainable communities strategy (SCS) as part of their regional transportation plan (RTP) that will achieve the GHG reduction targets set by CARB. If an MPO is unable to devise an SCS to achieve the GHG reduction target, the MPO must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to California Government Code, Section 65080(b)(2)(K), an SCS does not (1) regulate the use of land, (2) supersede the land use authority of cities and counties, or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the first SB 375 targets for the regional MPOs. The targets for Southern California Association of Governments (SCAG) are an 8 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035. Achieving these goals through adoption of a SCS is the responsibility of the MPOs. SCAG adopted its first RTP/SCS in April 2012. The plan quantified a 9 percent reduction by 2020 and a 16 percent reduction by 2035 (SCAG 2012). In June 2012, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds upon the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8 percent reduction by 2020 and an 18 percent reduction by 2030 (SCAG 2016). In June 2016, CARB accepted SCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve SCAG targets.

On March 22, 2018, CARB adopted updated targets in compliance with the requirement to update the targets for the MPOs every eight years. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing. The updated targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted Sustainable Community Strategies to achieve the SB 375 targets. An additional reduction of over 8 $MMTCO_2e$ in 2035 would result under the updated targets compared to the current targets. For the next round

of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with EPA and NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025. The Zero- Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

Executive Order B-16-12

Executive Order B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

Assembly Bill 1236

Assembly Bill 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of electric vehicle charging stations is a matter of statewide concern. The bill required electric vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric vehicle charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

Water

Executive Order B-29-15

In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

Assembly Bill 939 and Assembly Bill 341

In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. Assembly Bill 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

Assembly Bill 341 (Chapter 476, Statutes of 2011 (Chesbro)) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops and in August 2015 published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020, legislative and regulatory recommendations and an evaluation of program effectiveness (CalRecycle 2012).

Other State Actions

Senate Bill 97

Senate Bill 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The

CNRA adopted the CEQA Guidelines amendments in December 2009, and they became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4(a)). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines state that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4(a)). The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance-based standards" (14 CCR 15064.4(a)). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

Executive Order S-13-08

Executive Order S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009b), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the Safeguarding California Plan: 2018 Update, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

2015 State of the State Address

In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals, which would further reduce GHG emissions over the next 15 years. These goals include

an increase in California's renewable energy portfolio from 33 percent to 50 percent, a reduction in vehicle petroleum use for cars and trucks by up to 50 percent, measures to double the efficiency of existing buildings, and decreasing emissions associated with heating fuels.

2016 State of the State Address

In his January 2016 address, Governor Brown established a statewide goal to bring per capita GHG emission down to two tons per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 MOU) to limit global warming to less than two degrees Celsius by 2050. The Under 2 MOU agreement pursues emission reductions of 80 percent to 95 percent below 1990 levels by 2050 and/or reaching a per capita annual emissions goal of less than 2 metric tons by 2050. A total of 177 jurisdictions, including California, representing 37 countries and 6 continents, have signed or endorsed the Under 2 MOU (Under 2 2017).

Local Regulations

South Coast Air Quality Management District

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigations for potentially significant impacts. Although air districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues (SCAQMD 2008). As discussed below in Section 5.6.2, *Thresholds of Significance*, the South Coast Air Quality Management District (SCAQMD) has recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects. However, these thresholds were not adopted.

Southern California Association of Governments

Senate Bill 375 requires MPOs to prepare an SCS in their RTP. The SCAG Regional Council adopted the 2012 RTP/SCS in April 2012 (SCAG 2012), and the 2016–2040 RTP/SCS (2016 RTP/SCS) was adopted in April 2016. Both the 2012 and 2016 RTP/SCSs establish a development pattern for the region that, when integrated with the transportation network and other policies and measures, would reduce GHG emissions from transportation (excluding goods movement). Specifically, the 2012 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. The 2012 and 2016 RTP/SCSs do not require that local general plans, specific plans, or zoning be consistent with it but provide incentives for consistency for governments and developers.

South Bay Cities Council of Governments

The South Bay Cities Council of Governments (SBCCOG) is a joint powers authority of 16 cities and the County of Los Angeles that share the goal of maximizing the quality of life and productivity of the South Bay

area. The SBCCOG has been working on climate action planning since 2008, employing a subregional approach to the management and coordination of climate action planning to assist its cities in complying with legislation such as AB 32 and SB 375. The SBCCOG completed the South Bay Sustainable Strategy to address land use and mobility in an area that is transit poor. While the SBCCOG does not intend to produce an SCS, it hopes to use its South Bay Sustainable Strategy as a guide to develop a scenario-planning model that will allow the SBCCOG to independently plan and evaluate its member cities' development scenarios. This approach will supplement the regional SCS with a concrete tool to demonstrate a strategy that best fits the conditions in the South Bay to SCAG, the Los Angeles County Metropolitan Transportation Authority, and the South Bay cities' planning staffs.

City of Torrance

The City's General Plan includes various goals and policies designed to reduce GHG emissions within the City (Torrance 2010). Policies addressing climate change are integrated throughout the City's General Plan. The primary avenues to address climate change in urban areas are by lowering transportation emissions and encouraging energy conservation and efficiency. In addition, cities should address the urban heat island effect resulting from land use patterns, and encourage recycling, which reduces the amount of trash sent to landfills, thereby lowering methane emissions. Recycling also reduces the amount of energy needed to produce products.

Climate change and GHG reduction policies are addressed in multiple chapters of the General Plan. Objective CR.14 and associated policies are presented below (Torrance 2010).

- **OBJECTIVE CR.14:** To reduce the City's overall carbon footprint and counteract the effects of global warming through a reduction in the emissions of GHGs within Torrance.
    - **Policy CR.14.1:** Support the CARB in its ongoing plans to implement AB 32, and fully follow any new AB 32-related regulations.
    - **Policy CR.14.2:** Develop and implement GHG emissions reduction measures, including discrete, early-action GHG-reducing measures that are technologically feasible and cost-effective.
    - **Policy CR.14.3:** Pursue actions recommended in the U.S. Mayors Climate Protection Agreement to meet AB 32 requirements.
    - **Policy CR.14.4:** Act as a leader and example in sustainability and reduction in GHG emissions by conducting City business in the most GHG-sensitive way.

Many GHG emissions reduction strategies result in co-benefits with reducing criteria air pollutant emissions and vice versa. See Section 5.2.1.1 of this DEIR for a discussion of the City's air quality policies.

In 2009, the Torrance City Council adopted a Water Conservation Ordinance (Ordinance 3717) to prohibit wasteful uses of water, place certain restrictions on water use, and encourage sustained conservation (Torrance 2009). The Ordinance has four stages (Permanent Baseline Measured, Level 1, Level 2, and Level 3 Stages), which are enacted in response to the water supply conditions. On August 9, 2016, the City Council approved deactivation of Level 2 water requirements due to the improved water supplies.

The City, in coordination with SBCCOG, prepared the City of Torrance Climate Action Plan (City CAP) in order to reduce GHG emissions within the City (City of Torrance and SBCCOG 2017). The Torrance City Council adopted the City CAP on December 12, 2017. The City has established GHG reduction goals for year 2020 (15 percent below 2005 levels) and for year 2035 (49 percent below 2005 levels). The CAP includes a list of non-binding goals and strategies in the following five categories (Torrance and SBCCOG 2017):

- **Land Use and Transportation:** Facilitate pedestrian and neighborhood development and identify ways to reduce automobile emissions including supporting zero emission vehicle infrastructure, improving pedestrian and bicycle infrastructure, enhancing public transit service, and supporting reductions in single-occupancy vehicle use.
- **Energy Efficiency:** Emphasize energy efficiency retrofits for existing buildings, energy performance requirements for new construction, water efficient landscaping, financing programs that will allow home and business owners to obtain low-interest loans for implementing energy efficiency in their buildings.
- **Solid Waste:** Focus on increasing waste diversion and encouraging participation in recycling and composting throughout the community.
- **Urban Greening:** Create "carbon sinks" as they store GHG emissions that are otherwise emitted into the atmosphere as well as support health of the community.
- **Energy Generation and Storage:** Demonstrate the City's commitment to support the implementation of clean, renewable energy while decreasing dependence on traditional, GHG emitting power sources.

5.6.1.3 EXISTING CONDITIONS

The project site is primarily undeveloped open space and does not currently generate anthropomorphic GHG emissions.

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[5]

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with existing sources as well as the cumulative increase of all other sources

[5] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the proposed project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated at a project level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009a). The State of California has not adopted emission- based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory titled "CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review" states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

As stated, the City has adopted a CAP to reduce GHG emissions within the City. However, as described below, it is not a qualified CAP that can be used to tier from for CEQA purposes (Torrance and SBCCOG 2017):

> Within the CEQA process, a qualified CAP framework offers the ability to streamline future CEQA greenhouse gas analyses by being able to tier off the climate action plan. Depending on local factors, such as anticipated levels of development, a qualified CAP is not necessary and agencies would continue to utilize the framework for informing the selection and evaluation of climate planning strategies within the local context. The South Bay Cities Council of Governments CAP framework is unqualified, and offers cities a planning tool with optional strategies. The analysis and optional strategies in the CAP can be used in the future, by way of example, to help create a Qualified Climate Reduction Strategy under CEQA, to create GHG thresholds to be used in CEQA analysis and can be used to update the City's General Plan.

Thus, the City CAP cannot be used to tier from for this analysis. As such, to address Threshold GHG-1, this analysis uses the SCAQMD recommended (not adopted) numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects.

In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008). This guidance document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- **Tier 1.** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- **Tier 2.** Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- **Tier 3.** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- **Tier 4.** Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.
- **Tier 5.** Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

This analysis applies the SCAQMD screening threshold of 3,000 MT CO_2e per year for all non- industrial projects. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of

the project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the proposed SCAQMD threshold of 3,000 MT CO_2e per year.

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to SB 375. In addition to demonstrating the region's ability to attain and exceed the GHG emission reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the project, the strategies and policies set forth in the 2016 RTP/SCS can be grouped into the following three categories: (1) reduction of vehicle trips and VMT; (2) increased use of alternative fuel vehicles; and (3) improved energy efficiency. The project's consistency with these three strategy categories is presented below.

5.6.3 Environmental Impacts

5.6.3.1 APPROACH AND METHODOLOGY

Construction Emissions

CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 5.2.3.1 of this DEIR are also applicable for the estimation of construction-related GHG emissions. As such, see Section 5.2.3.1 for a discussion of construction emissions calculation methodology and assumptions.

Operational Emissions

CalEEMod Version 2016.3.2 was used to estimate potential project-generated operational GHG emissions from area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 5.2.3.1 of this DEIR for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources. Operational year 2019 was assumed, consistent with the project's TIS.

Area Sources

CalEEMod was used to estimate GHG emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 5.2.3.1 of this DEIR for a discussion of landscaping equipment emissions calculations. Consumer product use

and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy Sources

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the project's land uses. The energy use from residential land uses is calculated in CalEEMod based on the Residential Appliance Saturation Study. For nonresidential buildings, CalEEMod energy intensity value (electricity or natural gas usage per square foot per year) assumptions were based on the California Commercial End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs. Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using the emissions factors for Southern California Edison (SCE), which would be the energy provider for the project.

Per the 2016 CALGreen Tier 1 standards (24 CCR, Part 11), which would be required by the City, the project would be required to demonstrate that buildings exceed Title 24, Part 6, of the California Code of Regulations energy efficiency standards by 15 percent. This requirement was accounted for in CalEEMod. Additionally, based on the project applicant's commitment to provide Energy Star-rated appliances for each residential unit, it was assumed that the project would provide energy-efficient clothes washers, dishwashers, fans, and refrigerators. In addition, it was assumed that high-efficiency lighting would be incorporated in the parking garage and all common areas. In addition to installing LED lighting in all common areas, non-security or wayfinding lighting would include motion sensors to ensure that energy used for lighting is only used when needed. A 40 percent lighting energy reduction associated with high-efficiency lighting was assumed in CalEEMod.[6]

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt- hour) for SCE is based on the value for SCE's energy mix in 2012. As stated, SB X1-2 established a target of 33 percent from renewable energy sources for all electricity providers in California by 2020 and SB 350 calls for further development of renewable energy, with a target of 50 percent by 2030. The CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with SCE's 2016 Power Content Label, which reported that 28 percent of the power mix was generated by eligible renewable sources (SCE 2017). Because SCE is striving to meet the 33 percent RPS by December 31, 2020, the CO_2 emissions intensity factor is anticipated to be less than assumed in CalEEMod at project operation (2019), which would reflect the increase in percentage of renewable energy in SCE's energy portfolio.

[6] Per the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures, LE-1 (Install Higher Efficacy Public Street and Area Lighting) is applicable to public street and area outdoor lighting, which includes streetlights, pedestrian pathway lights, area lighting for parks and parking lots, and outdoor lighting around public buildings (CAPCOA 2010).; All items that are assumed in this DEIR, if not required as mitigation measures, will be included as conditions of approval.

Mobile Sources

All details for criteria air pollutants discussed in Section 5.2.3.1 of this DEIR are also applicable for the estimation of operational mobile source GHG emissions. Project site location and neighborhood enhancements that would reduce vehicle miles traveled and associated GHG emissions include proximity to job centers, increase in density compared to average residential development density, improvements for the pedestrian network, and provision of traffic calming measures at intersections and streets. Increase in density reduces GHG emissions by compacting houses housing in already urbanized land near transit, jobs and services to reduce vehicle miles traveled.

Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, NHTSA and EPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the project's motor vehicles. The effectiveness of fuel economy improvements was evaluated by using the CalEEMod emission factors for motor vehicles in 2019 to the extent it was captured in EMFAC 2014.

Notably, the project would comply with the 2016 CALGreen Tier 1 standards for residential development, which requires that 5 percent of the total number of parking spaces provided for all types of parking facilities be electric vehicle charging spaces capable of supporting future electric vehicle supply equipment. As such, GHG emission reductions were quantified for the inclusion of 25 (i.e., 5 percent of 484 parking spaces) electric vehicle charging spaces for the project.[7]

The LCFS calls for a 10 percent reduction in the "carbon intensity" of motor vehicle fuels by 2020, which would further reduce GHG emissions. However, the carbon intensity reduction associated with the LCFS was not assumed in EMFAC 2014 and thus was not included in CalEEMod Version 2016.3.2 or the calculations below, which are therefore considered conservative.

Solid Waste

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Per AB 341 (requiring mandatory commercial recycling beginning July 1, 2012), multifamily dwellings of five units or more must recycle; the Torrance Municipal Code includes three and four units in these recycling requirements as well (43.6.7 Equal Access Provision; Torrance 2017a). For multifamily homes without City services, private haulers providing collection services in the City are required to offer recycling services (Torrance 2017b). While AB 341 aims for a statewide 75% diversion rate by 2020, project compliance with the 50 percent diversion rate, consistent with the solid waste diversion requirements of AB 939, Integrated Waste Management Act, has been included in the GHG assessment. This assumption aligns with the City of

[7] Methodology based on Electric Vehicle Charging Stations as CEQA Mitigation: Greenhouse Gas Reductions and Cost Effectiveness (County of Santa Clara 2018).

Torrance Municipal Code (43.7.1 Waste Diversion, Recycling, and Graffiti; Torrance 2017a), which requires waste haulers to comply with the waste diversion schedule included in AB 939. In order to achieve the solid waste reduction requirement, the proposed project would include separate stream recycling on site for the whole property, with locations across the site for recycling bins and separate trash and recycling shoots. Additionally, the proposed project would contract all green waste to be managed by landscape companies.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. The water consumption estimate for indoor water use is based on the project's Hydraulic Network Analysis for Fire and Domestic Water Service (KHR Associates 2018), which estimates total domestic water usage from the project to be 88,084 gallons per day. The outdoor water use and electricity consumption from water use and wastewater generation were estimated using CalEEMod default values.

In regard to indoor water use, the project would install low-flow bathroom and kitchen faucets, low-flow toilets, and low-flow showers. According to the California Air Pollution Control Officers Association's Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures for WUW-1 (Water Use), incorporation of low-flow/high-efficiency fixtures in residential developments would result in the following reduction in GHG emissions (based on equivalent reduction in water, since GHG emissions from this source are directly proportional to water demand): 6.6 percent from toilets, 4.4 percent from showerheads, 5.7 percent from bathroom faucets, and 3.3 percent from kitchen faucets (CAPCOA 2010). This equates to a 20 percent reduction in indoor water use, which was included in the emissions estimate for the project. These reductions are based on flow-rates specified in the 2016 CALGreen residential mandatory standards that would apply to the project. In regard to outdoor water, the project would install water-efficient devices and landscaping in accordance with applicable ordinances, including use of drought-tolerant species appropriate to the climate and region. The project has committed to not include turf, which would reduce water use associated with landscaping. In addition, the project would be required to comply with EO B- 29-15, which calls for a 25 percent reduction in total water use below 2013 levels, and the Water Conservation Ordinance (Ordinance 3717) (Torrance 2009), which would reduce indoor and outdoor water use and associated GHG emissions. However, as a conservative assumption, no reduction in outdoor water use was assumed for the project.

5.6.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. [Threshold GHG-1]

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SCAQMD Draft Guidance Document: Interim CEQA Greenhouse Gas (GHG) Significance Threshold (2008), recommends that "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

Construction of the project is anticipated to last a total of approximately 29 months. On-site sources of GHG emissions include off-road equipment and off-site sources including vendor trucks and worker vehicles. Table 5.6-2, *Estimate of Construction GHG Emissions*, presents construction emissions for the project from on-site and off-site emission sources.

Table 5.6-2 Estimate of Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Year 1	914.45	0.09	0.00	916.79
Year 2	446.91	0.04	0.00	448.03
Year 3	217.99	0.02	0.00	218.49
Total	**1,579.35**	**0.15**	**0.00**	**1,583.31**

Source: Appendix B.
Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent. See Appendix B for complete results.

As shown in the table, the estimated total GHG emissions during construction of the project would be approximately 917 MT CO_2e in the first year of construction, 448 MT CO_2e in the second year of construction, and 219 MT CO_2e in the third year of construction, for a total of 1,583 MT CO_2e over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 52.78 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the following operational emissions analysis.

Operational Emissions

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity

consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. The estimated operational (year 2019[8]) project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 5.6-3, *Estimate Annual Operational GHG Emissions*.

Table 5.6-3 Estimate Annual Operational GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	4.19	0.01	0.00	4.29
Energy	650.57	0.03	0.01	653.43
Mobile	2,167.12	0.13	0.00	2,170.36
Solid waste	15.90	0.94	0.00	39.39
Water supply and wastewater	138.56	0.04	0.02	145.75
Total	**2,976.35**	**1.14**	**0.03**	**3,013.23**
GHG reduction from 25 electric vehicle charging spaces				(83.53)
Amortized construction emissions				52.78
Total operational + amortized construction GHGs				2,982.48

Source: Appendix B.
Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent. See Appendix B for complete results. These emissions reflect CalEEMod "mitigated" output and operational year 2019. Totals may not sum due to rounding.

As shown in the table, estimated annual project-generated GHG emissions would be approximately 3,013 MT CO_2e per year as a result of project operations only. After accounting for GHG reductions from inclusion of 25 electric vehicle charging spaces and summing the amortized project construction emissions, total GHGs generated by the project would be approximately 2,983 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the SCAQMD threshold of 3,000 MT CO_2e per year. Therefore, the project's GHG contribution would not be cumulatively considerable and is less than significant.

Impact 5.6-2: The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. [Threshold GHG-2]

Compliance with Applicable Laws and Regulations

Table 5.6-4, *Greenhouse Gas-Related Laws and Regulations,* identifies laws and regulations currently in effect that reduce project-related GHG emissions. Because GHG laws and regulations continue to expand under California's climate leadership efforts, including most recently the enactment of SB 100 (2018), Table 5.6.4 presents a snapshot of these GHG laws and regulations. Since additional GHG laws and regulations are likely to apply, and listed laws and regulations are likely to continue to evolve, the scope of GHG laws and regulations applicable to GHG-emissions related to the project is anticipated to expand over time and result in lower-than-predicted GHG emissions.

[8] Year 2019 was used to be consistent with the TIS.

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
Building Components/Facility Operations		
Roofs/Ceilings/Insulation	CALGreen Code (Title 24, Part 11) California Energy Code (Title 24, Part 6)	The project must comply with efficiency standards regarding roofing, ceilings, and insulation. For example: Roofs/Ceilings: New construction must reduce roof heat island effects per CALGreen Code Section 106.11.2, which requires use of roofing materials having a minimum aged solar reflectance, thermal emittance complying with Section A5.106.11.2.2 and A5.106.11.2.3 or a minimum aged Solar Reflectance Index as specified in Tables A5.106.11.2.2, or A5.106.11.2.3. Roofing materials must also meet solar reflectance and thermal emittance standards contained in Title 20 Standards. Roof/Ceiling Insulation: There are also requirements for the installation of roofing and ceiling insulation. (See Title 24, Part 6 Compliance Manual at Section 3.2.2.)
Flooring	CALGreen Code	The project must comply with efficiency standards regarding flooring materials. For example, for 80% of floor area receiving "resilient flooring," the flooring must meet applicable installation and material requirements contained in CALGreen Code Section 5.504.4.6.
Window and Doors (Fenestration)	California Energy Code	The project must comply with fenestration efficiency requirements. For example, the choice of windows, glazed doors, and any skylights for the project must conform to energy consumption requirements affecting size, orientation, and types of fenestration products used. (See Title 24, Part 6 Compliance Manual, Section 3.3.)
Building Walls/Insulation	CALGreen Code California Energy Code	The project must comply with efficiency requirements for building walls and insulation. Exterior Walls: Must meet requirements in current edition of California Energy Code, and comply with Sections A5.106.7.1 or A5.106.7.2 of CALGreen Code for wall surfaces, as well as Section 5.407.1, which required weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2. Construction must also meet requirements contained in Title 24, Part 6, which vary by material of the exterior walls. (See Title 24, Part 6 Compliance Manual, Part 3.2.3.) Demising (Interior) Walls: Mandatory insulation requirements for demising walls (which separate conditioned from non-conditions space) differ by the type of wall material used. (*Id.* at 3.2.4.) Door Insulation: There are mandatory requirements for air infiltration rates to improve insulation efficiency; they differ according to the type of door. (*Id.* at 3.2.5.)
Finish Materials	CALGreen Code	The project must comply with pollutant control requirements for finish materials. For example, materials including adhesives, sealants, caulks, paints and coatings, carpet systems, and composite wood products must meet requirements in CALGreen Code to ensure pollutant control. (CALGreen Code Section 5.504.4.)
Wet Appliances (Toilets/Faucets/Urinals, Dishwasher/Clothes Washer,	CALGreen Code California Energy Code Appliance Efficiency	Wet appliances associated with the project must meet various efficiency requirements. For example: Spa and Pool: Use associated with the project is subject to

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
Spa and Pool/Water Heater)	Regulations (Title 20 Standards)	appliance efficiency requirements for service water heating systems and equipment, spa and pool heating systems and equipment. (Title 24, Part 6, Sections 110.3, 110.4, 110.5; Title 20 Standards, Sections 1605.1(g), 1605.3(g); see also California Energy Code.) Toilets/Faucets/Urinals: Use associated with the project is subject to new maximum rates for toilets, urinals, and faucets effective January 1, 2016: • Showerheads maximum flow rate 2.5 gpm at 80 psi • Wash fountains 2.2 x (rim space in inches/20) gpm at 60 psi • Metering faucets 0.25 gallons/cycle • Lavatory faucets and aerators 1.2 gpm at 60 psi • Kitchen faucets and aerators 1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi • Public lavatory faucets 0.5 gpm at 60 psi • Trough-type urinals 16 inches length • Wall mounted urinals 0.125 gallons per flush • Other urinals 0.5 gallons per flush (Title 20 Standards, Sections 1605.1(h),(i) 1065.3(h),(i).) Water Heaters: Use associated with the project is subject to appliance efficiency requirements for water heaters. (Title 20 Standards, Sections 1605.1(f), 1605.3(f).) Dishwasher/Clothes Washer: Use associated with the project is subject to appliance efficiency requirements for dishwashers and clothes washers. (Title 20 Standards, Sections 1605.1(o),(p),(q), 1605.3(o),(p),(q).)
Dry Appliances (Refrigerator/Freezer, Heater/Air Conditioner, Clothes Dryer)	Title 20 Standards CALGreen Code	Dry appliances associated with the project must meet various efficiency requirements. For example: Refrigerator/Freezer: Use associated with the project is subject to appliance efficiency requirements for refrigerators and freezers. (Title 20 Standards, Sections 1605.1(a), 1605.3(a).) Heater/Air Conditioner: Use associated with the project is subject to appliance efficiency requirements for heaters and air conditioners. (Title 20 Standards, Sections 1605.1(b),(c),(d),(e), 1605.3(b),(c),(d),(e) as applicable.) Clothes Dryer: Use associated with the project is subject to appliance efficiency requirements for clothes dryers. (Title 20 Standards, Section 1605.1(q).)
	CALGreen Code	Installations of HVAC, refrigeration and fire suppression equipment must comply with CALGreen Code Sections 5.508.1.1 and 508.1.2, which prohibits CFCs, halons, and certain HCFCs and HFCs.
Lighting	Title 20 Standards	Lighting associated with the project will be subject to energy efficiency requirements contained in Title 20 Standards. General Lighting: Indoor and outdoor lighting associated with the project must comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(j),(k),(n), 1605.3(j),(k),(n).) Emergency lighting and self-contained lighting: the project must also comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(l), 1605.3(l).)

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
		Traffic Signal Lighting: For any necessary project improvements involving traffic lighting, traffic signal modules and traffic signal lamps will need to comply with applicable appliance efficiency regulations (Title 20 Standards, Sections 1605.1(m), 1605.3(m).)
	California Energy Code	Lighting associated with the project will also be subject to energy efficiency requirements contained in Title 24, Part 6, which contains energy standards for non-residential indoor lighting and outdoor lighting. (See Title 24 Part 6 Compliance Manual, at Sections 5, 6.) Mandatory lighting controls for indoor lighting include, for example, regulations for automatic shut-off, automatic daytime controls, demand responsive controls, and certificates of installation. (Id. at Section 5.) Regulations for outdoor lighting include, for example, creation of lighting zones, lighting power requirements, a hardscape lighting power allowance, requirements for outdoor incandescent and luminaire lighting, and lighting control functionality. (Id. at Section 6.)
	AB 1109	Lighting associated with the project will be subject to energy efficiency requirements adopted pursuant to AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.
Bicycle and Vehicle Parking	CALGreen Code	The project will be required to provide compliant bicycle parking, fuel-efficient vehicle parking, and electric vehicle charging spaces (CALGreen Code Sections 5.106.4, 5.106.5.1, 5.106.5.3)
	California Energy Code	The project is also subject to parking requirements contained in Title 24, Party 6. For example, parking capacity is to meet but not exceed minimum local zoning requirements, and the project should employ approved strategies to reduce parking capacity (Title 24, Part 6, section 106.6)
Landscaping	CALGreen Code	The CALGreen Code requires and has further voluntary provisions for: - A water budget for landscape irrigation use; - For new water service, separate meters or submeters must be installed for indoor and outdoor potable water use for landscaped areas of 1,000-5,000 square feet; - Provide water-efficient landscape design that reduces use of potable water beyond initial requirements for plant installation and establishment
	EO B-29-15	The project is also subject to emissions reduction requirements to be achieved by implementation of EO B-29-15. This emergency executive order directs the Department of Water Resources to lead a statewide initiative to replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes. The order also directed the departments to update the Model Water Efficient Landscaping Ordinance, which they did in 2015.
	Model Water Efficient Landscaping Ordinance	The model ordinance promotes efficient landscaping in new developments and establishes an outdoor water budget for new and renovated landscaped areas that are 500 square feet or larger. (CCR, Title 23, Division 2, Chapter 2.7.)

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
	Cap-and-Trade Program	Transportation fuels used in landscape maintenance equipment (e.g., gasoline) would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Refrigerants	CARB Management of High GWP Refrigerants for Stationary Sources	Any refrigerants associated with the project will be subject to CARB standards. CARB's Regulation for the Management of High GWP Refrigerants for Stationary Sources 1) reduces emissions of high-GWP refrigerants from leaky stationary, non-residential refrigeration equipment; 2) reduces emissions resulting from the installation and servicing of stationary refrigeration and air conditioning appliances using high-GWP refrigerants; and 3) requires verification GHG emission reductions. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5.1, Section 95380 et seq.)
Consumer Products	CARB High GWP GHGs in Consumer Products	All consumer products associated with the project will be subject to CARB standards. CARB's consumer products regulations set VOC limits for numerous categories of consumer products, and limits the reactivity of the ingredients used in numerous categories of aerosol coating products (CCR, Title 17, Division 3, Chapter 1, Subchapter 8.5.)
Construction		
Use of Off-Road Diesel Engines, Vehicles, and Equipment	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: 1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; 2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; 3) restricts the adding of older vehicles into fleets starting on January 1,2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The requirements and compliance dates of the Off-Road regulation vary by fleet size, as defined by the regulation.
	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in equipment operation would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Pollutant Control	CALGreen Code	If an HVAC system is used during construction, the project must use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 5.2.1-1992. All filters must be replaced immediately prior to occupancy. (CALGreen Code Section A5.504.1.3.)
Greening New Construction	CALGreen Code	All new construction, including the project, must comply with CALGreen Code, as discussed in more detail throughout this table. Adoption of the mandatory CALGreen Code standards for construction has been essential for improving the overall environmental performance of new buildings; it also sets voluntary targets for builders to exceed the mandatory requirements.

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
Construction Waste	CALGreen Code	The project will be subject to CALGreen Code requirements for construction waste reduction, disposal, and recycling, such as a requirement to recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.
Worker, vendor and truck vehicle trips (on-road vehicles)	Cap-and-Trade Program	Transportation fuels (e.g., gasoline) used in worker, vendor and truck vehicle trips would be subject to the Cap-and-Trade Program. (See "Energy Use," below.)
Solid Waste		
Solid Waste Management	Landfill Methane Control Measure	Waste associated with the project will be disposed per state requirements for landfills, material recovery facilities, and transfer stations. Per the statewide GHG emissions inventory, the largest emissions from waste management sectors come from landfills and are in the form of CH4. In 2010, CARB adopted a regulation that reduces emissions from methane in landfills, primarily by requiring owners and operators of certain uncontrolled municipal solid waste landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner. The regulation allows local air districts to voluntarily enter into a memorandum of understanding with CARB to implement and enforce the regulation and to assess fees to cover costs of implementation.
	Mandatory Commercial Recycling (AB 341)	AB 341 will require the project, if it generates four cubic yards or more of commercial solid waste per week, to arrange for recycling services, using one of the following: self-haul; subscribe to a hauler(s); arranging for pickup of recyclable materials; subscribing to a recycling service that may include mixed waste processing that yields diversion results comparable to source separation. The project will also be subject to local commercial solid waste recycling program required to be implemented by each jurisdiction under AB 341.
	CALGreen Code	The project will be subject to CALGreen Code requirement to provide areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (CALGreen Code Section 5.410.1)
Energy Use		
Electricity/Natural Gas Generation	Cap-and-Trade Program	Electricity and natural gas usage associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 metric tons or more of CO2e annually from the GHG emissions that would

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
		result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Renewable Energy	California RPS (SB X1-2, SB 350, and SB 100)	Energy providers associated with the project will be required to comply with RPS set by SB X1 2, SB 350, and SB 100. SB X1 2 requires investor-owned utilities, publicly-owned utilities, and electric service providers to increase purchases of renewable energy such that at least 33% of retail sales are procured from renewable energy resources by December 31, 2020. In the interim, each entity was required to procure an average of 20% of renewable energy for the period of January 1, 2011 through December 31, 2013; and will be required to procure an average of 25% by December 31, 2016, and 33% by 2020. SB 350 requires retail sellers and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030. SB 100 increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045.
	Million Solar Roofs Program (SB 1)	The project will participate in California's energy market, which is affected by implementation of the Million Solar Roofs Program. As part of Governor Schwarzenegger's Million Solar Roofs Program, California has set a goal to install 3,000 megawatts of new, solar capacity through 2016. The Million Solar Roofs Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time.
	California Solar Initiative-Thermal Program	The project will participate in California's energy market, which is affected by implementation of the California Solar Initiative - Thermal Program. The program offers cash rebates of up to $4,366 on solar water heating systems for single-family residential customers. Multifamily and Commercial properties qualify for rebates of up to $800,000 on solar water heating systems and eligible solar pool heating systems qualify for rebates of up to $500,000. Funding for the California Solar Initiative-Thermal program comes from ratepayers of Pacific Gas & Electric, SCE, Southern California Gas Company, and San Diego Gas & Electric. The rebate program is overseen by the CPUC as part of the California Solar Initiative.
	Waste Heat and Carbon Emissions Reduction Act (AB 1613, AB 2791)	The project will participate in California's energy market, which is affected by implementation of the Waste Heat and Carbon Emissions Reduction Act. Originally enacted in 2007 and amended in 2008, this act directed the CEC, CPUC, and CARB to implement a program that would encourage the development of new combined heat and power systems in California with a generating capacity of not more than 20 megawatts, to increase combined heat and power

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
		use by 30,000 gigawatt hour. The CPUC publicly owned electric utilities, and CEC duly established policies and procedures for the purchase of electricity from eligible combined heat and power systems. CEC guidelines require combined heat and power systems to be designed to reduce waste energy; have a minimum efficiency of 60%; have NOx emissions of no more than 0.07 pounds per megawatt-hour; be sized to meet eligible customer generation thermal load; operate continuously in a manner that meets expected thermal load and optimizes efficient use of waste heat; and be cost effective, technologically feasible, and environmentally beneficial.
Vehicular/Mobile Sources		
General	SB 375 and SCAG RTP/SCS	The project complies with, and is subject to, the SCAG adopted RTP/SCS, which CARB approved as meeting its regional GHG targets in 2016.
Fuel	Low Carbon Fuel Standard (LCFS)/ EO S-01-07	Auto trips associated with the project will be subject to LCFS (EO S-01-07), which requires a 10% or greater reduction in the average fuel carbon intensity by 2020 with a 2010 baseline for transportation fuels in California regulated by CARB. The program establishes a strong framework to promote the low carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG goals.
	Cap-and-Trade Program	Use of gasoline associated with the project will be subject to the Cap-and-Trade Program. The rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, importers and distributors of fossil fuels were added to the Cap-and-Trade Program in the second phase. Specifically, on January 1, 2015, cap-and-trade compliance obligations were phased in for suppliers of natural gas, RBOB, distillate fuel oils, and liquefied petroleum gas that meet or exceed specified emissions thresholds. The threshold that triggers a cap-and-trade compliance obligation for a fuel supplier is 25,000 MT or more of CO2e annually from the GHG emissions that would result from full combustion or oxidation of quantities of fuels (including natural gas, RBOB, distillate fuel oil, liquefied petroleum gas, and blended fuels that contain these fuels) imported and/or delivered to California.
Automotive Refrigerants	CARB Regulation for Small Containers of Automotive Refrigerant	Vehicles associated with the project will be subject to CARB's Regulation for Small Containers of Automotive Refrigerant. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 5, Section 95360 et seq.) The regulation applies to the sale, use, and disposal of small containers of automotive refrigerant with a GWP greater than 150. The regulation achieves emission reductions through implementation of four requirements: 1) use of a self-sealing valve on the container, 2) improved labeling instructions, 3) a deposit and recycling program for small containers, and 4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010 with a one-year sell-through period for containers manufactured before January 1, 2010. The target recycle rate is initially set at 90%, and rises to 95% beginning January 1, 2012.

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
Light-Duty Vehicles	AB 1493 (or the Pavley Standard)	Cars that drive to and from the project will be subject to AB 1493, which directed CARB to adopt a regulation requiring the maximum feasible and cost-effective reduction of GHG emissions from new passenger vehicles. Pursuant to AB 1493, CARB adopted regulations that establish a declining fleet average standard for CO2, CH4, N2O, and HFCs (air conditioner refrigerants) in new passenger vehicles and light-duty trucks beginning with the 2009 model year and phased-in through the 2016 model year. These standards are divided into those applicable to lighter and those applicable to heavier portions of the passenger vehicle fleet. The regulations will reduce "upstream" smog-forming emissions from refining, marketing, and distribution of fuel.
	Advanced Clean Car and ZEV Programs	Cars that drive to and from the project will be subject to the Advanced Clean Car and ZEV Programs. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, new automobiles will emit 34% fewer global warming gases and 75% fewer smog-forming emissions. The ZEV program will act as the focused technology of the\ Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018-2025 model years.
	Tire Inflation Regulation	Cars that drive to and from the project will be subject to the CARB Tire Inflation Regulation, which took effect on September 1, 2010, and applies to vehicles with a gross vehicle weight rating of 10,000 pounds or less. Under this regulation, automotive service providers must, inter alia, check and inflate each vehicle's tires to the recommended tire pressure rating, with air or nitrogen, as appropriate, at the time of performing any automotive maintenance or repair service, and to keep a copy of the service invoice for a minimum of three years, and make the vehicle service invoice available to the CARB, or its authorized representative upon request.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles. (75 FR 25324–25728 and 77 FR 62624–63200.)
Medium- and Heavy-Duty Vehicles	CARB In-Use On-Road Heavy-Duty Diesel Vehicles Regulation (Truck and Bus Regulation)	Any heavy-duty trucks associated with the project will be subject to CARB standards. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
	CARB In-Use Off-Road Diesel Vehicle Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB In-Use-Off-Road Diesel Vehicle Regulation applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulations: 1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; 2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; 3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The requirements and compliance dates of the Off-Road regulation vary by fleet size, as defined by the regulation.
	Heavy-Duty Vehicle GHG Emission Reduction Regulation	Any relevant vehicle or machine use associated with the project will be subject to CARB standards. The CARB Heavy-Duty Vehicle GHG Emission Reduction Regulation applies to heavy-duty tractors that pull 53-foot or longer box-type trailers. (CCR, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 1, Section 95300 et seq.) Fuel efficiency is improved through improvements in tractor and trailer aerodynamics and the use of low rolling resistance tires.
	EPA and NHTSA GHG and CAFE standards.	Mobile sources that travel to and from the project would be subject to EPA and NHTSA GHG and CAFE standards for medium- and heavy-duty vehicles. (76 FR 57106–57513.)
Water Use		
Water Use Efficiency	Emergency State Water Board Regulations	Water use associated with the project will be subject to emergency regulations. On May 18, 2016, partially in response to EO B-27-16, the State Water Board adopted emergency water use regulations (CCR, title 23, Section 864.5 and amended and re-adopted Sections 863, 864, 865, and 866). The regulation directs the State Water Board, Department of Water Resources, and CPUC to implement rates and pricing structures to incentivize water conservation, and calls upon water suppliers, homeowners' associations, California businesses, landlords and tenants, and wholesale water agencies to take stronger conservation measures.
	EO B-37-16	Water use associated with the project will be subject to Emergency EO B-37-16, issued May 9, 2016, which directs the State Water Resources Control Board to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. The Water Board must also develop a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25% reduction called for in EO B-29-15. The Water Board and Department of Water Resources will develop new, permanent water use targets to which the project will be subject. The Water Board will permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
		other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.
	EO B-40-17	EO B-40-17 lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinds EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the State Water Resources Control Board to continue development of permanent prohibitions on wasteful water use to which the project will be subject.
	SB X7-7	Water provided to the project will be affected by SB X7-7's requirements for water suppliers. SB X7-7, or the Water Conservation Act of 2009, requires all water suppliers to increase water use efficiency. It also requires, among other things, that the Department of Water Resources, in consultation with other state agencies, develop a single standardized water use reporting form, which would be used by both urban and agricultural water agencies.
	CALGreen Code	The project is subject to CALGreen Code's water efficiency standards, including a required 20% mandatory reduction in indoor water use. (CALGreen Code, Division 4.3.)
	California Water Code, Division 6, Part 2.10, Sections 10910–10915.	Development and approval of the project requires the development of a project-specific Water Supply Assessment.
	Cap-and-Trade Program	Electricity usage associated with water and wastewater supply, treatment and distribution would be subject to the Cap-and-Trade Program.
	California RPS (SB X1-2, SB 350, SB 100)	Electricity usage associated with water and wastewater supply, treatment and distribution associated with the project will be required to comply with RPS set by SB X1-2, SB 350, and SB 100.
Water Recycling	Water Reclamation Requirements for Recycled Water Use. State Water Resources Control Board Order WQ 2016-0068-DDW	These requirements replace 2014-0090-DWQ General Waste Discharge Requirements for Recycled Water Use, and establish standard conditions for recycled water use and conditionally delegates authority to an Administrator to manage a Water Recycling Program and issue Water Recycling Permits to recycled water users. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape irrigation, crop irrigation, dust control, industrial/commercial cooling, decorative fountains, etc. Potable reuse is not covered.
	Regulations for Groundwater Replenishment Using Recycled Water	This emergency rulemaking by the California Department of Public Health (California Title of Regulations, Title 22, Sections 60301.050 et seq.), effective June 18, 2014, applied to Groundwater Replenishment Reuse projects utilizing surface application, which received initial permits from the Regional Board. The regulations address permitting and plan approval, sampling requirements, operation requirements, and ongoing reporting requirements.
	Policy for Water Quality Control for Recycled Water. State Water Resources Control Board Resolution No. 2009-0011,	The project would be subject to the State Water Resources Control Board statewide mandate to increase recycled water usage by 0.2 million acre-feet per year by 2020. However, recycled water is not currently available at the project site.

Table 5.6-4 Greenhouse Gas-Related Laws and Regulations

Project Component	Applicable Law/Regulations	GHG Reduction Measures Required for Project
	as amended by Resolution No. 2013-0003	

Notes: gpm = gallons per minute; psi = pounds per square inch; GHG = greenhouse gas; AB = Assembly Bill; SB = Senate Bill; EO = Executive Order; HVAC = heating, ventilation, and air conditioning; CFC = chlorofluorocarbons; HFCs = hydrofluorocarbons; HCFCs = hydrochlorofluorocarbons; CEC = California Energy Commission; CCR = California Code of Regulations; CARB = California Air Resources Board; GWP = global warming potential; VOC = volatile organic compounds; MERV = Minimum Efficiency Reporting Value; ASHRAE = American Society of Heating, Refrigerating and Air-Conditioning Engineers; CH4 = methane; CO2e = carbon dioxide equivalent; RBOB = reformulated blendstock for oxygenate blending; RPS = renewable portfolio standard; CPUC = California Public Utilities Commission; SCE = Southern California Edison; NOx = oxides of nitrogen; SCAG = Southern California Association of Governments; RTP = regional transportation plan; SCS = sustainable communities strategy; LCFS = low carbon fuel standard; CO2 = carbon dioxide; N2O = nitrous oxide; ZEV = zero-emissions vehicle; EPA = Environmental Protection Agency; NHTSA = National Highway Traffic Safety Administration; CAFE = corporate average fuel economy; PM = particulate matter; FR = Federal Register.

As described above, the project's GHG emissions (both on and off-site) are regulated by many GHG reduction mandates. Compliance with these GHG reduction legal requirements is appropriately assumed to occur under CEQA (*Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal. App. 4th 884, 906; *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal. App. 4th 214, 244-45). This supports the conclusion that the project's GHG contribution would not be cumulatively considerable and is less than significant.

Applicable plans adopted for the purpose of reducing GHG emissions include SCAG's 2016-2040 RTP/SCS and the City's CAP. A consistency analysis with these plans for the proposed project is presented below.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to SB 375. In addition to demonstrating the region's ability to attain and exceed the GHG emission reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the project, the strategies and policies set forth in the 2016 RTP/SCS can be grouped into the following three categories: (1) reduction of vehicle trips and VMT; (2) increased use of alternative fuel vehicles; and (3) improved energy efficiency. The project's consistency with these three strategy categories is presented below.

Consistency with VMT Reduction Strategies and Policies

The project's consistency with this aspect of the 2016 RTP/SCS is demonstrated via the project's land use characteristics and features that would reduce vehicular trips and VMT, as well as the project's consistency with the regional growth forecast assumed in the 2016 RTP/SCS for the City. As discussed, vehicle trip generation and planned development for the project site are concluded to have been anticipated in the SCAG 2016 RTP/SCS growth projections because the increased population at the project site would be accommodated by the City's predicted population projections in the Housing Element Update. In summary, the project site location and neighborhood enhancements that would reduce VMT and associated GHG emissions include proximity to job centers, increase in density compared to average residential development density, improvements for the pedestrian network, and provision of traffic calming measures at intersections and streets.

Increased Use of Alternative Fueled Vehicles Policy Initiative

The second goal of the 2016 RTP/SCS, with regard to individual development projects such as the project, is to increase alternative fueled vehicles to reduce per capita GHG emissions. This 2016 RTP/SCS policy initiative focuses on accelerating fleet conversion to electric or other near zero-emission technologies. The project would be consistent with these strategies since the EV charging station requirements of the CALGreen Mandatory standards would be implemented into the project, including designating 5 percent of the total number of parking spaces as EV charging spaces capable of supporting future electric vehicle supply equipment.

Energy Efficiency Strategies and Policies

The third important focus within the 2016 RTP/SCS, for individual developments such as the proposed project, involves improving energy efficiency (e.g., reducing energy consumption) to reduce GHG emissions. The 2016 RTP/SCS goal is to actively encourage and create incentives for energy efficiency, where possible. The project would comply with the 2016 CALGreen Tier 1 standards, which would be required by the City, including demonstration that buildings exceed Title 24, Part 6, of the California Code of Regulations energy efficiency standards by 15%. Additionally, the project applicant committed to provide Energy Star-rated appliances for each residential unit. Finally, high-efficiency lighting would be incorporated in the parking garage and all common areas. In addition to installing LED lighting in all common areas, non-security or wayfinding lighting would include motion sensors to ensure that energy used for lighting is only used when needed.

Based on the analysis above, the proposed project would be consistent with the SCAG 2016 RTP/SCS.

SB 32 and EO S-3-05

The project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-3-05 and SB 32. As stated, EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40 percent below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near- term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80 percent below 1990 levels, the First Update states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce

> emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the Second Update, which states (CARB 2017a):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

The project would not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050 because the project would not exceed the SCAQMD's draft interim threshold of 3,000 MT CO_2e per year (SCAQMD 2008). Because the project would not exceed the threshold, this analysis provides support for the conclusion that the project would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050. In addition, the project would comply with laws and regulations that would reduce GHG emissions.

Furthermore, the project would not conflict with the state's trajectory toward future GHG reductions. In addition, since the specific path to compliance for the state in regard to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the project would be speculative and cannot be identified at this time. The project's consistency would assist in meeting the City's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40 percent reduction target by 2030 and EO S-3-05's 80 percent reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets.

City of Torrance Climate Action Plan

The City, in coordination with SBCCOG, has developed a CAP to reduce GHG emissions within the City and thereby reduce the City's contribution to global climate change concerns. However, this CAP is not a Qualified GHG Emissions Reduction Plan under CEQA per the requirements outlined in the CEQA Guidelines, Section 15183.5(D); therefore, no CEQA document can tier from the City CAP. While there are no mandatory GHG plans, policies, or regulations or finalized agency guidelines that would apply to implementation of the project, a description of the relevant plans with GHG reduction strategies is provided below.

The City CAP includes GHG reduction strategies in the sectors of land use and transportation, energy efficiency, solid waste, urban greening, and energy generation and storage, to reach the City's GHG reduction targets (Torrance and SBCCOG 2017). The project would include many design features, detailed in Sections 5.2.3.1 and 5.6.3.1 of this DEIR, that would result in reduced GHG emissions from the project, consistent with the intent and strategies of the City CAP. Table 5.6-5, *Project Consistency with City CAP GHG Emission Reduction Measures*, details the project's consistency with each of the City CAP GHG reduction measures.

Table 5.6-5 Project Consistency with City CAP GHG Emission Reduction Measures

City CAP Measure	Measure Number	Project Consistency
Land Use and Transportation (LUT)		
Goal LUT: A – Accelerate the Market for EV Vehicles		
EV Charging Policies	LUT: A1	Consistent. The EV charging station requirements of the CALGreen Tier 1 standards would be implemented into the project, including designating 25 spaces (i.e., 5 percent) of the total number of parking spaces as EV charging spaces capable of supporting future electric vehicle supply equipment (EVSE).
Administrative Readiness	LUT: A2	City to implement. Not applicable to the project.
Public Information Programs	LUT: A3	City to implement. Not applicable to the project.
Goal LUT: B – Encourage Ride-Sharing		
Facilitate Private and Public Mobility Services (Ride-Hailing, Ride-Sharing, Car-Sharing, Bike-Sharing)	LUT: B1	Consistent. Project site and amenities were designed to include ride-hailing areas (UBER, Lyft, private car services) and would have a central ride-sharing center in the leasing office. The project will also include private bike storage facilities.
Goal LUT: C – Encourage Transit Usage		
Provide a Bus Rapid Transit (BRT) System	LUT: C1	City to implement. Not applicable to the project.
Expand Transit Network	LUT: C2	City to implement. Not applicable to the project.
Increase Transit Frequency and Speed	LUT: C3	City to implement. Not applicable to the project.
Goal LUT: D – Adopt Active Transportation Initiatives		
Provide Traffic Calming Measures	LUT: D1	Consistent. Internal roadways would be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. These include that all on-site project intersections would have marked crosswalks; approximately 50 percent of intersections would have raised medians; approximately 25 percent of internal streets would provide on-street parking; and approximately 10 percent would have raised medians with landscaping. A raised median would be provided at 50 percent of the project access points. An off-site deceleration lane for slowing entrance traffic to the site from Hawthorne Boulevard is included in the project design.
Improve Design of Development	LUT: D2	Consistent. The project includes design features intended to enhance transit orientation and encourage non-vehicular mobility. The project's pedestrian network, high-density development, and location near jobs and complementary land uses within close walking distance includes numerous neighborhood retail, restaurant, and personal service businesses which would influence alternative modes of travel and result in shorter trip lengths, thereby reducing GHG emissions. The project would also include an on-site work-share center to promote living and working within the planned community.
Goal LUT: E – Organizational Strategies		
Encourage Telecommuting and Alternative Schedules	LUT: E1	Consistent. The project would include an on-site work-share center to promote living and working within the planned community.
Implement Commute Trip Reduction Programs	LUT: E2	Not applicable.
Provide Car-Sharing Programs	LUT: E3	Consistent. Project site and amenities were designed to include ride-hailing areas (UBER, Lyft, private car services) and would have a central ride-sharing center in the leasing office.
Goal LUT: F – Land Use Strategies		

Increase Diversity	LUT: F1	Consistent. The project would result in high-density development near jobs and complementary land uses.
Increase Transit Accessibility	LUT: F2	City to implement. Not applicable to the project.
Integrate Affordable and Below-Market-Rate Housing	LUT: F3	City to establish these policies and ordinances. The project would include all market-rate housing units, not below-market- rate housing. However, the project would include construction of new housing and more affordable options than other established single-family residences in the vicinity.
Integrate Neighborhood Oriented Development (NOD) Principles	LUT: F4	Consistent. The project's pedestrian network, high-density development, and location near jobs and complementary land uses would influence alternative modes of travel and result in shorter trip lengths, which would reduce GHG emissions.
Goal LUT: G – Digital Technology Strategies		
Collaborate On and Implement the South Bay Digital Master Plan	LUT: G1	City to implement. Not applicable to the project.
Energy Efficiency (EE)		
Goal EE: A – Increase Energy Efficiency in Existing Residential Units		
EE Training, Education, and Recognition	EE: A1	Applies to existing residences; not applicable to the project.
Increase Participation in Existing EE Programs	EE: A2	Applies to existing residences; not applicable to the project.
Establish, Promote, or Require Home Energy Evaluations	EE: A3	Applies to existing residences; not applicable to the project.
Promote, Incentivize, or Require Residential Home Energy Renovations	EE: A4	Applies to existing residences; not applicable to the project.
Goal EE: B – Increase Energy Efficiency in New Residential Developments		
Encourage or Require EE Standards Exceeding Title 24	EE: B1	Consistent. The project would comply with the CALGreen Tier 1 standards, which currently require projects to exceed the Title 24, Part 6, of the California Code of Regulations energy efficiency standards by 15 percent. Specific design measures to meet this requirement ultimately will be determined during the building permit process. The project would also use high-efficiency lighting in the parking garage and all common areas. The project would provide Energy Star-rated appliances for each residential unit, including clothes washers, dishwashers, fans, and refrigerators.
Goal EE: C – Increase Energy Efficiency in Existing Commercial Units		
Training and Education	EE: C1	Applies to existing commercial uses; not applicable to the project.
Increase Participation in Existing EE Programs	EE: C2	Applies to existing commercial uses; not applicable to the project.
Incentivize or Require Non-Residential Energy Audits	EE: C3	Applies to existing commercial uses; not applicable to the project.
Promote or Require Commercial Energy Retrofits	EE: C4	Applies to existing commercial uses; not applicable to the project.
Goal EE: D – Increase Energy Efficiency in New Commercial Developments		
Encourage or Require EE Standards Exceeding Title 24	EE: D1	Applies to new commercial uses; not applicable to the project.
Goal EE: E – Increase Energy Efficiency Through Water Efficiency		
Promote or Require Water Efficiency through SB X7-7	EE: E1	Consistent. Regarding indoor water use, the project would install low-flow bathroom and kitchen faucets, toilets, and showers. Regarding outdoor water, the project would install water-efficient devices and landscaping in accordance with applicable ordinances, including use of drought-tolerant species appropriate to the climate and region. The project has committed to not include any turf, which would reduce water use associated with landscaping.

Promote Water Efficiency Standards Exceeding SB X7-7	EE: E2	Not feasible. Per the applicant, recycled water is not available at the site, and the reuse of urban water on site was determined to be infeasible.
Goal EE: F – Decrease Energy Demand Through Reducing Urban Heat Island Effect		
Promote Tree Planting for Shading and EE	EE: F1	Consistent. Site development footprint has almost no trees in it currently. The project's conceptual landscape plan includes planting of new trees within the community on its periphery.
Incentivize or Require Light-Reflecting Surfaces	EE: F2	Consistent. The project would comply with Title 24 or other local energy codes for cool roof reflective materials.
Goal EE: G – Participate in Education, Outreach, and Planning for Energy Efficiency		
Increase Energy Savings through the SCE Energy Leader Partnership	EE: G1	Not applicable.
Goal EE: H – Increase Energy Efficiency in Municipal Buildings		
Conduct Municipal Energy Audit	EE: H1	Applies to municipal buildings; not applicable to the project.
Require Green Building Certification	EE: H2	Applies to municipal buildings; not applicable to the project.
Implement Water Leak Detection Program	EE: H3	Applies to municipal buildings; not applicable to the project.
Participate in Demand Response Programs	EE: H4	Applies to municipal buildings; not applicable to the project.
Participate in Direct Install Program	EE: H5	Applies to municipal buildings; not applicable to the project.
Install Cool Roofs	EE: H6	Applies to municipal buildings; not applicable to the project.
Retrofit HVAC Equipment and Water Pumps	EE: H7	Applies to municipal buildings; not applicable to the project.
Utilize and Energy Management System	EE: H8	Applies to municipal buildings; not applicable to the project.
Goal EE: I – Increase Energy Efficiency in City Infrastructure		
Retrofit Traffic Signals and Outdoor Lighting	EE: I1	City to implement. Not applicable to the project.
Upgrade or Incorporate Water-Conserving Landscape	EE: I2	City to implement. Not applicable to the project.
Plant Trees for Shade and Carbon Sequestration	EE: I3	City to implement. Not applicable to the project.
Goal EE: J – Reduce Energy Consumption in the Long Term		
Develop and Energy Reinvestment Fund	EE: J1	City to implement. Not applicable to the project.
Solid Waste (SW)		
Goal SW: A – Increase Diversion and Reduction of Residential Waste		
Education and Outreach to Residents	SW: A1	Consistent. Private waste hauler would provide waste service to the project site. The private waste hauler would be required to provide information on recycling and waste reduction to the residents as stated in the Torrance Municipal Code Section 43.7.1.
Implement Residential Collection Programs to Increase Diversion of Waste	SW: A2	Consistent. The project would comply with all City and state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.
Goal SW: B – Increase Diversion and Reduction of Commercial Waste		
Implement Commercial Collection Programs to Increase Diversion of Waste	SW: B2	City to implement. Not applicable to the project.
Goal SW: C – Reduce and Divert Municipal Waste		
Education and Program for Municipal Employees/ Facilities	SW: C1	City to implement. Not applicable to the project.
Urban Greenings (UG)		
Goal UG: A – Increase and Maintain Urban Greening in the Community		

Increase Community Gardens	UG: A1	No community gardens are planned as part of the project, but the project would be consistent with the goal of maximizing vegetation for CO_2 sequestration through the preservation of 18.97 acres of the 24.68-acre property as natural open space that will remain its current state.
Increase Rooftop Gardens	UG: A2	Not feasible. Rooftop gardens are not feasible for the project based on the minimal rooftop space available. Roof space is limited because it would be used to house mechanical systems, primarily the heating, ventilation, and air conditioning systems, that would serve the entire project, and because of the multistory nature of the project, the ratio of roof space to residential space is small.
Support Local Farms	UG: A3	Not applicable.
Goal UG: B – Increase and Maintain Urban Greening in Municipal Facilities		
Restoration/Preservation of Landscapes	UG: B1	Applies to municipal facilities; not applicable to the project.
Increase Open Space	UG: B2	Applies to municipal facilities; not applicable to the project. However, the project would preserve 18.97 acres of the 24.68-acre property as natural open space that will remain its current state.
Energy Generation and Storage (EGS)		
Goal EGS: A – Support Energy Generation and Storage in the Community		
Community Choice Aggregation	EGS: A1	City to implement; not applicable to the project.
Siting and Permitting	EGS: A2	Not feasible. Based on information provided by the project applicant, on-site generation of renewable energy using solar panels is not feasible, given the minimal rooftop space available, to provide the electricity needed to make rooftop solar economically feasible and reliable for future residents. Roof space is limited because it would be used to house systems, primarily the heating, ventilation, and air conditioning systems, that would serve the entire project, and because of the multistory nature of the project, the ratio of roof space to residential space is small. Rooftop solar is also inhibited by the approximately 250-foot-high hill face directly to the south and east of the development site, which reduces solar sun access.
Policies and Ordinances	EGS: A3	City to implement; not applicable to the project.
Education and Outreach	EGS: A4	City to implement; not applicable to the project.
Education and Outreach to Businesses	SW: B1	City to implement. Not applicable to the project.
Explore Technologies in Municipal Facilities	EGS: A5	Applies to municipal facilities; not applicable to the project.

Source: Appendix B.

Based on the analysis in Table 5.6-5, the project would generally be consistent with the applicable strategies and measures in the City CAP.

Summary

Based on the above considerations, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

5.6.4 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin, but are dispersed worldwide. Therefore, impacts under Impact 5.6-1 are not project-specific impacts to global warming, but the proposed project's contribution to this cumulative impact. As discussed under Impact 5.6-1, buildout of the proposed project would result in annual emissions that would not exceed SCAQMD's draft interim threshold of 3,000 MT CO_2e per year. Therefore, project-related GHG emissions and their contribution to global climate change are not cumulatively considerable, and GHG emissions impacts would be less than significant.

5.6.5 Existing Regulations and Standard Conditions

This analysis assumes compliance with all applicable laws as follows.

State

- California Global Warming Solutions Act (AB 32)
- California Global Warming Solutions Act of 2006: Emissions Limit (SB 32)
- Sustainable Communities and Climate Protection Act (SB 375)
- Greenhouse Gas Emission Reduction Targets (Executive Order S-03-05)
- Clean Car Standards – Pavley (AB 1493)
- Renewables Portfolio Standards (SB 1078)
- California Integrated Waste Management Act of 1989 (AB 939)
- California Mandatory Commercial Recycling Law (AB 341)
- California Advanced Clean Cars CARB (Title 13 CCR)
- Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Heavy-Duty Vehicle Greenhouse Gas Emissions Reduction Measure (Title 17 CCR)
- Low Carbon Fuel Standard (Title 17 CCR)
- California Water Conservation in Landscaping Act of 2006 (AB 1881)
- California Water Conservation Act of 2009 (SBX7-7)
- Statewide Retail Provider Emissions Performance Standards (SB 1368).
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.6-1 and 5.6-2.

5.6.7 Mitigation Measures

No mitigation measures are required.

5.6.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.6.9 References

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5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

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5.7 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the proposed project on human health and the environment due to exposure to hazardous materials or conditions associated with the project site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary.

This section incorporates four thresholds of significance for wildfire impacts added to CEQA Guidelines Appendix G by the CEQA Guidelines Update approved in December 2018. Thus, this section is divided into two subsections:

1. Hazardous materials
2. Wildfire and emergency response planning

Airport-related hazards were identified as less than significant in the Initial Study, which is included as Appendix A to this DEIR. Therefore, those hazards are not addressed in this section.

The analysis in this section is based, in part, upon the following source(s):

- *Solana Torrance Property Phase I Environmental Site Assessment, Torrance, California,* Kennedy/Jenks Consultants, September 15, 2015
- *Limited Subsurface Assessment Results, (Phase II ESA) Solana Torrance Development, Torrance, California,* Kennedy/Jenks Consultants, February 17, 2016
- *Report of Findings, Solana Torrance Site, Hawthorne Boulevard and, Via Valmonte, Torrance, CA,* Kennedy/Jenks Consultants, August 21, 2018
- *DTSC Comments on the ADEIR for the Butcher Solana Residential Development Project,* Department of Toxic Substances Control, March 19, 2019

Complete copies of these documents are included as Appendices F1, F2, F3, and F4 to this Draft EIR.

Thirty-one comments relating to hazards and hazardous materials were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential for previously unknown hazardous materials—which may have been deposited at the site with the uncontrolled fill material—to adversely impact the community. Additional comments were raised regarding the potential for construction activities to disturb the silica and diatomaceous earth at the site, creating hazardous particulate matter. The presence of silica and diatomaceous earth at the site, and associated impacts resulting from soil disturbance and grading activities, namely the creation of fugitive dust at the project site, is addressed further in Section 5-2, Air Quality. The potential impacts relating to hazardous risk from construction and operation of the proposed project have been analyzed in this section.

5.7.1 Hazardous Materials

5.7.1.1 ENVIRONMENTAL SETTING

Applicable Plans and Regulations

Federal, state, and local laws, regulations, plans, or guidelines that are related to hazardous materials and applicable to the proposed project are summarized below.

Federal

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage and disposal of hazardous and nonhazardous wastes. Federal hazardous waste laws are generally promulgated under RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substance Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably with the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of and response to uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Emergency Planning and Community Right-to-Know Act

The primary purpose of the federal Emergency Planning and Community Right-to-Know Act of 1986 is to inform communities and citizens of chemical hazards in their areas. Sections 311 and 312 of the act require businesses to report the location and quantities of chemicals stored on-site to state and local agencies. Under Section 313, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, pollution prevention measures, and chemical recycling activities. The US Environmental Protection Agency (EPA) maintains the Toxic Release Inventory database, which compiles the information that regulated facilities are required to report annually.

Superfund Amendments and Reauthorization Act

In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title 5 of this regulation requires that each community establish a local emergency planning committee that is responsible for developing a plan for preparing for and responding to a chemical emergency. The emergency plan is required to include the following information:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting drills to test the plan.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The local emergency planning committee is required to review, test, and update the plan each year. The City of Torrance Fire Department is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with City departments and local and state agencies. The goal is to improve public and private sector readiness and to mitigate local impacts resulting from natural or manmade emergencies.

Federal Occupational Safety and Health Act

The Federal Occupational Safety and Health Act of 1970 authorizes each state (including California) to establish their own safety and health programs with the US Department of Labor, Occupational Safety and Health Administration (OSHA) approval. The California Department of Industrial Relations regulates implementation of worker health and safety in California. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations (CCR) and include practices for all industries (General Industrial Safety Orders) and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.

OSHA Regulation 29 CFR Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. Federal, state, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition following all applicable regulations.

State

Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 CCR Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business which uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

Environmental Protection Agency

One of the primary agencies that regulate hazardous materials is the California Environmental Protection Agency (CalEPA). The state, through CalEPA, is authorized by the US EPA to enforce and implement certain federal hazardous materials laws and regulations. The DTSC, a department of CalEPA, protects California and Californians from exposure to hazardous waste, primarily under the authority of the federal RCRA and the California Health and Safety Code Sections 25100 et seq. and 25300 et seq. The DTSC requirements include the need for written programs and response plans, such as Hazardous Materials Business Plans. The DTSC programs include dealing with aftermath cleanups of improper hazardous waste management; evaluation of samples taken from sites; enforcement of regulations regarding use, storage, and disposal of hazardous materials; and encouragement of pollution prevention.

California Land Reuse and Revitalization Act

The California Land Reuse and Revitalization Act (CLRAA) (California Health and Safety Code Chapters 6.82 and 6.83) provide liability protections for landowners, purchasers, tenants, and prospective purchasers. The liability protections are intended to promote the cleanup and redevelopment of blighted contaminated properties. The law establishes a process for eligible property owners to obtain immunities, conduct a site assessment, and implement a response action as necessary to ensure that the property can be reused or redeveloped.

Land Use Covenants

Land use covenants between landowners and DTSC, authorized under the California Health and Safety Code Chapters 6.5, 6.8, and 6.85 and the California Civil Code, Section 1471, allow ongoing use of a contaminated property as long as the cleanup remedy is not compromised by current or future development.

Division of Occupational Safety and Health

Like OSHA at the federal level, Cal/OSHA is the responsible state-level agency for ensuring workplace safety. Cal/OSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. In the event that a site is contaminated, a Site Safety Plan must be crafted and implemented to protect the safety of workers. Site Safety Plans establish policies, practices, and procedures to prevent the exposure of workers and members of the public to hazardous materials originating from contaminated sites or buildings.

Department of Transportation and California Highway Patrol

Two state agencies have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies: the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides intercity rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on those highway and freeway lanes and intercity rail services.

The CHP enforces hazardous materials and hazardous waste labeling and packing regulations designed to prevent leakage and spills of materials in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to ensure regulatory compliance. In addition, the state regulates the transportation of hazardous waste originating or passing through the state.

Common carriers are licensed by the CHP pursuant to the California Vehicle Code, Section 32000. This section requires licensing every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of the business in the delivery of hazardous materials.

Hazardous Materials Disclosure Programs

The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs, which include: Hazardous Materials Release Response Plans and Inventories (Business Plans), the California Accidental Release Prevention (CalARP) Program, and the Underground Storage Tank (UST) Program. The Unified Program is implemented at the local government level by Certified Unified Program Agencies (CUPAs). The Los Angeles County Fire Department Health Hazardous Materials Division has oversight of aboveground storage tanks, Cal ARP Program, Hazardous Waste Program, and Hazardous Materials Program. The Torrance Fire Department has oversight of underground storage tanks in the city (LACFD 2018).

Accidental Release Prevention Program

The CalARP became effective on January 1, 1997, in response to Senate Bill 1889. CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors at a business and the mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of hazardous materials business plans under the Unified Program, implemented by the CUPA.

Local

Los Angeles County and City of Torrance

The Los Angeles County Fire Department Health Hazardous Materials Division is the local CUPA. A local CUPA is responsible for administering/overseeing compliance with the following programs, as required by State and federal regulations:

- Hazardous Materials Release Response Plans and Inventories (Area Plans)
- California Accidental Release Prevention (CalARP) Program
- Aboveground Petroleum Storage Act (APSA) Requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans (AST)
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

The Torrance Fire Department is a Participating Agency in the Certified Unified Program and has oversight of USTs in the city.

Existing Conditions

The project site is the entire 24.68-acre site, and the development area is the proposed 5.71-acre development footprint. To support the environmental clearance of the project site, a Phase I ESA and a Limited Subsurface Assessment were prepared during the period of September 2015 and February 2016 respectively. During subsequent project discussions with the City of Torrance, Fire Department officials required that the applicant enter into an oversight program with a California state agency to evaluate the findings of Kennedy/Jenks' 2015 findings. In October 2017, the applicant entered into a California Land Reuse and Revitalization Agreement (CLRRA) for regulatory oversight of the environmental aspects of the project site with the DTSC. The applicant prepared a Report of Findings, in August 2018. The following summarizes the environmental assessments that were performed on the proposed project site.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (Phase I ESA) was prepared by Kennedy/Jenks Consultants (Kennedy/Jenks), published September 15, 2015. The Phase I was conducted in accordance with the EPA AAI rule (40 CFR, Part 312) as described in the American Society for Testing and Materials Standard E1527-13 (ASTM E1527-13). The Phase I is included as Appendix E1 of this DEIR.

Recognized Environmental Conditions

A recognized environmental condition (REC) is the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property due to release to the environment; under conditions indicative of a

release to the environment; or under conditions that pose a material threat of a future release to the environment. No RECs, controlled RECs, or historical RECs were identified for the project site in the Phase I. However, the Phase I identified several notable findings pertaining to hazardous materials at the project site; listed below under *Agency Records Review* and *Site Reconnaissance*.

Agency Records Review

The Phase 1 ESA conducted information requests to agencies responsible for chronicling historical and ongoing hazards and hazardous releases at the project site and in the project site's vicinity. No hazardous materials sites were identified within the project site in the agency records review conducted as part of the Phase I for the project site. The following off-site hazardous materials sites were identified in the records review:

- Hawthorne Canyon Landfill, 3,850 feet southwest and upgradient of the project site, is a former landfill in a residential area that received a No Further Action (NFA) status for reported impacts to soil and soil gas in 1997. A requirement of the NFA status was to install a continually operating gas collection system that is properly maintained.

- Palos Verdes Landfill (PVLF), approximately 650 feet south and upgradient of the project site, is a former landfill with portions that encompassed the current South Coast Botanic Gardens, Ernie Howlett Park, and the former Hawthorne Canyon Landfill. The main landfill site has a restricted land use for remaining impacts from landfill operations. Groundwater impacts from the PVLF have migrated north along Hawthorne Boulevard and the south-southeast boundary of the project site. Some monitoring wells near the southern portion of the project site show volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in groundwater above their respective maximum allowable concentrations in drinking water. The Phase I concluded that, if present beneath the project site, impacts from a groundwater plume may pose a vapor encroachment risk for a residential development. Active remediation of groundwater at the PVLF site is ongoing, utilizing a subsurface bentonite-cement barrier and wells that are upgradient of the proposed project site to discourage migration and extract contaminated groundwater. According to the Phase 1, the environmental control systems currently in place at the Palos Verdes Landfill are functioning properly and no additional remedial measures and monitoring systems are necessary.

- A former Shell Station at 25535 Hawthorne Boulevard near the south project site boundary is listed as a leaking underground storage tank site on the GeoTracker database maintained by the State Water Resources Control Board had reported petroleum-related chemical impacts to soil and groundwater. The case received closure from the oversight agency in 2010 and groundwater monitoring wells associated with the site were subsequently destroyed. However, some monitoring wells used to monitor the PVLF site are located in close proximity to the Subject Property; well PV03 is within approximately 100 feet of the southern boundary of the Subject Property. According to 2014 LACSD well data, petroleum-related chemicals are not detected in these two nearby wells.

- Some nearby properties north and east of the project site were identified as having released petroleum-related chemicals to soil only. These cases have been closed by their respective oversight agency.

- Two properties northeast of the project site were identified as having released VOC-related chemicals into the environment; however, releases at the first property, a dry cleaner site, were reported to impact soil only and have received case closure by the oversight agency. Releases at the second property, an industrial site about one mile from the project site, were reported to impact soil and groundwater; however, the historic and current hydraulic gradient in that area is to the east and away from the project site. Therefore, the latter site is not an environmental concern for the proposed project.

- Based on the EDR Radius Map Report, an east-west trending natural gas pipeline bisects the center of the project site.

Site Reconnaissance

Kennedy/Jenks performed the project area reconnaissance on July 8, 2015. The process of backfilling the previous mining pit has been ongoing since the 1960's. In late 2008 and mid-2009, the former quarry mining pit was returned to surface grade with uncontrolled fill using a combination of existing onsite-sourced quarry tailings and fill material imported from other construction projects in the Palos Verdes area (Kennedy/Jenks 2018). The site is primarily vacant and undeveloped. Small debris piles of wood, plastic bottles, and other household trash were observed during the site reconnaissance.

Limited Subsurface Assessment – Phase 2 Environmental Site Assessment

Soil Vapor Survey

Based on the results of the Phase 1 ESA's evidence of groundwater and soil contamination from PVLF and the former Shell Station in proximity to the site, a limited assessment (Phase II ESA) of soil vapor within Lot 1was completed by Kennedy/Jenks Consultants in February 2016. This assessment evaluated the potential for off-gassing from groundwater or imported fill to pose a vapor intrusion risk to the proposed development. The assessment report is included as Appendix E2 to this DEIR.

A soil vapor survey was conducted in accordance with the July 2015 Advisory Active Soil Gas Investigations issued by the RWQCB and DTSC. Eight temporary soil vapor probes were drilled to a depth of approximately five feet below ground surface (bgs); probe locations are shown on Figure 5.7-1, *Soil Vapor Well Locations, Limited Soil Vapor Assessment*. Soil vapor samples were tested for VOCs by EPA Method 8260SV.

The Phase II stated that benzene was detected in probe SV-8 at a concentration of 0.15 micrograms per liter (µg/l), slightly above the San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (ESL)[1] for a residential setting (0.042 µg/l). Toluene was detected in probes SV-2 at a concentration of 2.2 µg/l, well below the residential ESL of 160 µg/l. VOCs were not detected in the other six probes. The ESLs are commonly used for screening-level assessments in California, but may not be strictly accepted by regulatory agencies outside of the San Francisco Bay area.

[1] San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESL)s are commonly used as for screening-level assessments in California but may not be strictly accepted by regulatory agencies outside of the San Francisco Area. The Phase 2 ESA references these ESLs in its analysis.

The detections of these constituents were not co-located, as the two temporary wells are on opposite ends of the site, and neither constituent was detected in any of the other soil vapor samples collected from the site. Therefore, the assessment concluded that the benzene detected was likely de minimis surface staining from recreational vehicle traffic in the area or equipment used to backfill the mine, rather than off-gassing from a regional groundwater plume or contaminated fill materials. Based on these findings, there does not appear to be a VOC vapor intrusion risk for the proposed residential development. However, as benzene was detected in levels above the reports identified screening levels, the City of Torrance Fire Department referred the project to DTSC and the Los Angeles Regional Water Quality Control Board for further review and action. Table 5.7-1, *Phase II Soil Vapor Contamination Findings,* summarizes the extent of soil vapor contamination discussed above.

Table 5.7-1 Phase II Soil Vapor Contamination Findings

Contaminant	Highest Measured Concentration	ESL	Exceeds Threshold?
Benzene	0.15 µg/l	0.042 µg/l	Yes
Toluene	2.2 µg/l	160 µg/l	No

Kennedy/Jenks Consultants, Phase 2 ESA, 2016

California Land Reuse and Revitalization Agreement (CLRAA)

Based upon the Torrance Fire Department request for review, the applicant entered into consultation with the DTSC regarding development of the proposed project. In October 2017, Torrance entered into a CLRRA for regulatory oversight of the environmental aspects of the project site with DTSC. CLRRA is the legally binding mechanism used for DTSC's oversight of the environmental investigation.

During initial discussions with the DTSC, the applicant and the agency determined oversight would most appropriately apply to area Lot 1 of the project site. Therefore, it was agreed that the CLRRA document will be revised to more specifically apply to the footprint of development once the final development boundaries have been finalized. The CLRRA Program sets forth assessment and remediation objectives to be accomplished by qualifying property purchasers in return for certain immunities from liability. The agreement also provides for the DTSC to obtain reimbursement for their related oversight costs. DTSC will utilize this DEIR in approving a final Response Plan.

In accordance with Section 5 of the CLRRA, Kennedy/Jenks provided existing data to DTSC and prepared a Report of Findings (Kennedy/Jenks 2018). The Report of Findings provided data on the existing conditions of the project site, and addressed the DTSC's concerns regarding the potential for impacts to be present at the site as a result of the following:

- The potential for methane from the former PVLF to pose a risk to the development area
- The potential for groundwater from the former PVLF to pose a risk to the development area
- The potential for fill material within the development area to be impacted soil from uncontrolled backfilling, including material from the former Shell site located on Hawthorne Boulevard.

The report was accepted by the DTSC in their Adequacy of Report of Findings, dated August 23, 2018. The results of the Report of Findings will be addressed in the Section 5.7.1.3, Environmental Impacts below.

Report of Findings Existing Conditions Summary

Regional Hydrology

The Los Angeles Regional Board's Basin Plan (LARWQCB, 2014) indicates that the Project Site is located in the Palos Verdes uplift, which is not considered a groundwater basin. However, groundwater on the eastern side of the Palos Verdes uplift is considered by the plan to be upgradient of the West Coast Basin (refer to Chapter 5.08, Hydrology for greater details regarding the West Coast Basin). Per the June 1995 *Remedial Investigation Report, Palos Verdes Landfill Volume I* prepared by the Sanitation Districts of Los Angeles County, the Palos Verdes Hills are underlain by bedrock of the Monterey Formation which is considered to be non-waterbearing, in the economic sense. The bedrock originates from deep marine sediments with poor natural water quality consisting of elevated levels of dissolved solids, metals, and organic compounds (does not meet secondary drinking water standards). Groundwater in the Palos Verdes Hills generally follows the topographic gradient, flowing from southwest to northeast. Hydrogeologic modeling has demonstrated that groundwater flow in the Former PVLF area (Palos Verdes Hills) is unconfined, topographically driven, and tributary to the regional flow in the West Coast Basin. The model demonstrates that there is a zone of limited areal extent, the "zone of particle pathways", within which the particles of groundwater emanating from the PVLF will flow; and particle tracking exercises indicate that groundwater particles originating at the Former PVLF generally require over 2,000 years to reach the West Coast Basin.

The West Coast Basin is structurally separated from the Palos Verdes Hills by the Palos Verdes fault zone which locally acts as a partial barrier to groundwater flow. Some groundwater, of poor quality, migrates very slowly through the unweathered Monterey Formation bedrock along northdipping bedding planes and fractures, however, fractures within the Monterey Formation are commonly filled with clay, secondary mineralization, and naturally occurring hydrocarbons (tar) which limit the transmission of groundwater through these fractures. Steep groundwater gradients exist near the inferred trace of the Palos Verdes fault zone indicating that the fault zone acts as a partial barrier to groundwater flow from the Palos Verdes Hills to the West Coast Basin. These gradients are more pronounced near Hawthorne Boulevard and become less pronounced to the east.

The nearest groundwater supply well is documented to be located 3-1/4 miles to the north of the PVLF in the downtown area of the City of Torrance, per the Water Replenishment District Regional Groundwater Monitoring Report Water Year 2016-2017, published in March 2018 shows a nested monitoring well (Chandler 3) approximately 2 miles away.

Summary of Geotechnical Investigations and Soil Removal/Replacement History

The Report of Findings summarized the previously identified Pacific Soils Engineering, Inc., Geotechnical Report of Compacted Fill Placement and the Geocon West, Inc., Preliminary Geotechnical Investigation. Pacific Soils, Inc. (Pacific Soils) conducted a geotechnical investigation in 2005 that consisted of four bucket auger borings and nine test pits. The bucket auger borings were advanced to depths up to 111 feet below the existing ground surface (bgs) and the test pits were advanced to a maximum depth of 17 feet bgs.

Pacific Soils later completed a grading/compacted fill placement project at the Project Site that consisted of:

- Stripping and clearing the area proposed for grading of existing trash, brush, vegetation and other deleterious materials for offsite disposal,
- Excavation of in place soils consisting of artificial fill, colluvial soils, and weathered bedrock (unsuitable soils) prior to the replacement and recompaction of remaining suitable soils, and
- Importing, placing, and recompacting fill from offsite sources.

"The primary source of import material was the Sunrise Senior Living construction project located southerly adjacent to the subject site. These materials, which were transported to the disposal site in bottom dump trailers and dump trucks, were primarily diatomaceous claystones and siltstones of the Valmonte Dolomite. Near the end of the import operations described herein, additional materials were brought into the site in end dump trucks. This material was primarily sourced from smaller construction projects on the Palos Verdes peninsula and consisted of a varied admixture of clay, silt and sand with a significant amount of adobe clay" (Pacific Soils, 2010).

In July 2015, Geocon West, Inc. (Geocon) conducted a geotechnical investigation that consisted of drilling 17 large-diameter bucket auger borings to depths between 11 and 111.5 feet bgs, four of which were downhole logged by a Certified Engineering Geologist, and six 4-inch diameter borings utilizing manual augers and digging equipment to depths between 7 and 23.5 feet bgs. Geocon West, Inc. completed a supplemental investigation in May 2017 that consisted of drilling nine 8-inch diameter borings using a truck-mounted hollow-stem auger rig to depths between 60.5 and 120.5 feet bgs, and three 8-inch diameter borings to depths between 15 and 25 feet bgs for the proposes of percolation testing (Geocon, 2017).

Site Geology and Soil Zones

Fill soils in the project site consist of three layers ("zones"): The mine pit has been backfilled since the 1960's, and returned to surface grade in 2008 and 2009 using on-site quarry tailings and fill material imported from other construction sites in the Palos Verdes area.

- Zone 1: An upper zone of fill material that consists of material brought in during the final stages of backfilling from various small construction sites around the Palos Verdes Peninsula.
- Zone 2: An intermediate zone of fill material that consists of material brought onsite from the Sunrise Senior Living property to the south, a portion of which included a former Shell gasoline station.
- Zone 3: The deepest zone of fill material represents native Project Site soils that were excavated during historic mining activities (tailings) and later replaced into the base of the pit.

Site Groundwater

As described above, geotechnical borings were drilled in the development area to a maximum depth of 120.5 feet bgs (elevation 71.5 feet msl) and groundwater was not encountered (Geocon West, Inc., 2017). The depth

of 120.5 feet bgs indicates that the deepest boring extends 46 feet into native material beyond the deepest point of investigated fill (74 feet bgs).

As described above, groundwater associated with the Former PVLF is documented to be topographically-driven through overburden materials. According to the Report of Findings, "near surface geologic materials at and near the [PVLF] Site are composed of alluvium and other unconsolidated sediment and have relatively high hydraulic conductivity compared with underlying bedrock units. These overburden materials act as preferential pathways for groundwater movement. Prior to landfilling and mining operations, two primary surface water drainages crossed the present [PVLF] Site… Various tributaries merged into the main drainages along present day Crenshaw and Hawthorne Boulevards. Alluvium in these historic drainages forms the preferred pathway for groundwater flow in the area".

In contrast to the PVLF conditions described above, topographic and geologic conditions appear to separate impacted PVLF groundwater from the project site and result in minimal drainage to the Development Area. This is supported by data from Former PVLF Well M63B, which is the nearest PVLF groundwater monitoring well to the development area and is located along Hawthorne Boulevard, downgradient of the landfill. In the fourth quarter of 2017 the groundwater elevation in this well was 160.76 feet above mean sea-level (amsl). This elevation is approximately 90 feet above the deepest boring advanced within the development area. This demonstrates that the development area is separated from the historic drainage along Hawthorne Boulevard that controls groundwater flow from the western portion of the Former PVLF. With limited topographic drainage and generally low precipitation feeding the project site, infiltration to groundwater under current conditions beneath the project site is not expected to be a significant source of water for the West Coast Basin. Infiltration rates will be further reduced by the proposed development and associated storm water management infrastructure.

Figure 5.7-1 - Soil Vapor Well Locations, Limited Soil Vapor Assessment

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SV-1 Soil Vapor Sample Locations (8)

Note: All locations and boundaries are approximate.

Source: Kennedy/Jenks Consultants, 2015

0 200
Scale (Feet)

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5.7.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-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.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

5.7.1.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement. Impacts related to Threshold H-1 were identified as less than significant in the NOP and are therefore not analyzed in this Draft EIR.

Impact 5.7-1 Methane from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2]

The Report of Findings examined whether methane or any other toxic air contaminant routinely monitored at the former PVLF pose a risk to the project site. Based on the findings, landfill gas migration from the former PVLF to the project site does not appear to be occurring, specifically due to the fact that the mostly inert solid waste material deposited in the most proximal portion of the Former PVLF (Ernie Howlett Park) generates limited quantities of landfill gas because it contains little organic material. Secondly, low-level quantities of landfill gas generated, if any, are mitigated by the gas collection systems installed at the former PVLF. Additionally, geologic and positional constraints prevent migration of landfill gas to the project site. Landfill gas impacts would not adversely affect the project site, and impacts would be less than significant

Impact 5.7-2 Groundwater from the former Palos Verdes Landfill site would not cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2]

The project site appears to by hydrogeologically separated from the topographically-driven groundwater associated with the former PVLF and is structurally separated from the West Coast Basin by the Palos Verdes fault zone which locally acts as a partial barrier to groundwater flow. Therefore, very limited topographic

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018 and have not changed with regards to the Initial Study's thresholds.

drainage feeds the Project Site, meaning that infiltration to groundwater beneath the Project Site is not a significant source of water for the West Coast Basin. Geotechnical investigation activities that have occurred on the Project Site extended to a depth of 120.5 feet bgs without any indication of groundwater.

The final pad elevations for the proposed development sit topographically lower than the bottom of the Former PVLF Deposits. The base of the landfill deposit is at an elevation >200 feet amsl (County Sanitation Districts of Los Angeles County, September 1995), while the final pad elevations for the proposed development range from 190.75 to 193.5 feet amsl. The Report of Findings detail that the shallow groundwater systems associated with the former PVLF does not flow beneath the project site due to geologic constraints that prevent groundwater flow from the PVLF to the project site. Also, groundwater collection and remedial measures at the former PVLF stem off-site migration of impacted groundwater to off-site properties. Additionally, the southern two-thirds portion of the project site that is closest to the PVLF will not be developed and will remain as open space. Groundwater contamination would not adversely impact the project site, and impacts would be less than significant.

Impact 5.7-3 Fill material within the development area from uncontrolled backfilling, including material from the former Shell site could cause a significant hazard to the environment with implementation of the proposed project. [Threshold H-2 and H-4]

Fill Material Investigation

The fill investigation was to assess the upper two zones of fill (Zones 1 and 2). Zone 3 soils do not require assessment because:

- They are comprised of native material sourced from the excavated hillside and pit.
- Volatile aspects, if any, related to historic mining activities that may have impacted the proposed development will be assessed with the soil vapor sampling work.
- Given the groundwater conditions associated with Lot 1, the potential for impacts to groundwater related to historic mining activities are of limited concern.[3]

DTSC's October 2*001 Information Advisory on Clean Imported Fill Material* (Guidance) was used as a guide to develop specific sampling approaches for Zone 1 and 2 as described below:

- Total Number of Samples - The Guidance is written for material prior to import, however, our conditions involved soils that have already been imported to the Lot 1 development area. Therefore, it was decided that using the area approach specified in the Recommended Fill Material Sampling Schedule for the number of samples was appropriate. The guidance recommends a minimum of 8 samples for a borrow area between 4 and 10 acres. DTSC and Kennedy/Jenks therefore agreed that a total of ten borings would be advanced with individual samples collected from Zones 1 and 2.
- Constituents of Potential Concern (COPCs) - Because soil in Zone 1 is of uncertain origin, this material was evaluated for all COPCs referenced in DTSC's Guidance. Since Zone 2 soil comes from

[3] Topographic and geologic conditions appear to separate impacted PVLF groundwater from the Project Site and result in minimal drainage to the area of Lot 1 (Kennedy/Jenks 2018).

a known location in which gasoline services were historically conducted, these soils were evaluated for Total Petroleum Hydrocarbons – Carbon Chain Identification, metals, and Volatile Organic Compounds (soil vapor).

- Soil vapor step-out and step-down samples were required to evaluate the detections of toluene (2.2 micrograms per liter (µg/L) in SV-2 at 5 feet below the ground surface [bgs]) and benzene (0.15 µg/L in SV-8 at 5 feet bgs) observed during Kennedy/Jenks' 25 August 2015 soil vapor investigation. Soil vapor samples targeting depths of 5 and 15 feet bgs were deemed appropriate.

Soil and Soil Vapor Sampling and Testing

Kennedy/Jenks completed the fill material investigation in January of 2018. Soil and soil vapor were sampled and tested from the mining pit backfill in the development area of the project site to determine whether the soil was contaminated at levels above residential screening levels by pollutants derived from the former Shell Station in Zone 2, and/or by pollutants from unknown construction sites in Zone 1.

Soil samples were obtained from 11 soil borings at depths ranging from 1.5 to 25 feet bgs in January 2018. Soil vapor samples were obtained from 19 borings, separate from the soil borings, at depths from 5 to 35 feet bgs during that same time period. Boring locations are shown on Figure 5.7-2, *Soil and Soil Vapor Borings Map, Fill Material Investigation*.

Soil samples were tested for contaminants, including metals, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons, polychlorinated biphenyls, total petroleum hydrocarbons, pesticides, and asbestos. Soil vapor samples were tested for VOCs.

Regional screening levels (RSLs) for soil and soil vapor used were from the DTSC and the EPA. The screening criteria used for soil included the DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA)-Note 3 January 2018 recommended screening levels for residential soil. The EPA Regional Screening Level (RSL) Resident Soil Table was used when the DTSC SL was not available. Screening levels provide a preliminary means to consider values detected during preliminary screening assessments in comparison to specified standards. If exceeded, a more rigorous screening level or baseline HHRA is necessary to evaluate the actual site-specific level of risk.

The screening criteria used for soil vapor is calculated from the DTSC Modified Screening Level for residential air, or the EPA Ambient Air RSL where there is no DTSC-SL.

The risks from chemicals in soil and soil vapor are higher than the screening levels, indicating that a site-specific human health risk assessment is necessary to evaluate the potential for unacceptable risks if the project site were redeveloped for residential use without any mitigation. The results identify sporadic detections of the constituents of concern in both soil and soil vapor. Detections observed are generally consistent with the fill zone designations. Zone 2 detections are typically fuel-related whereas Zone 1 impacts include a variety of minor impacts that likely reflect material brought in as fill from various construction sites rather than a particular point source. The following summarizes the results of the soil and soil vapor testing.

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Figure 5.7-2 - Soil and Soil Vapor Borings Map, Fill Material Investigation

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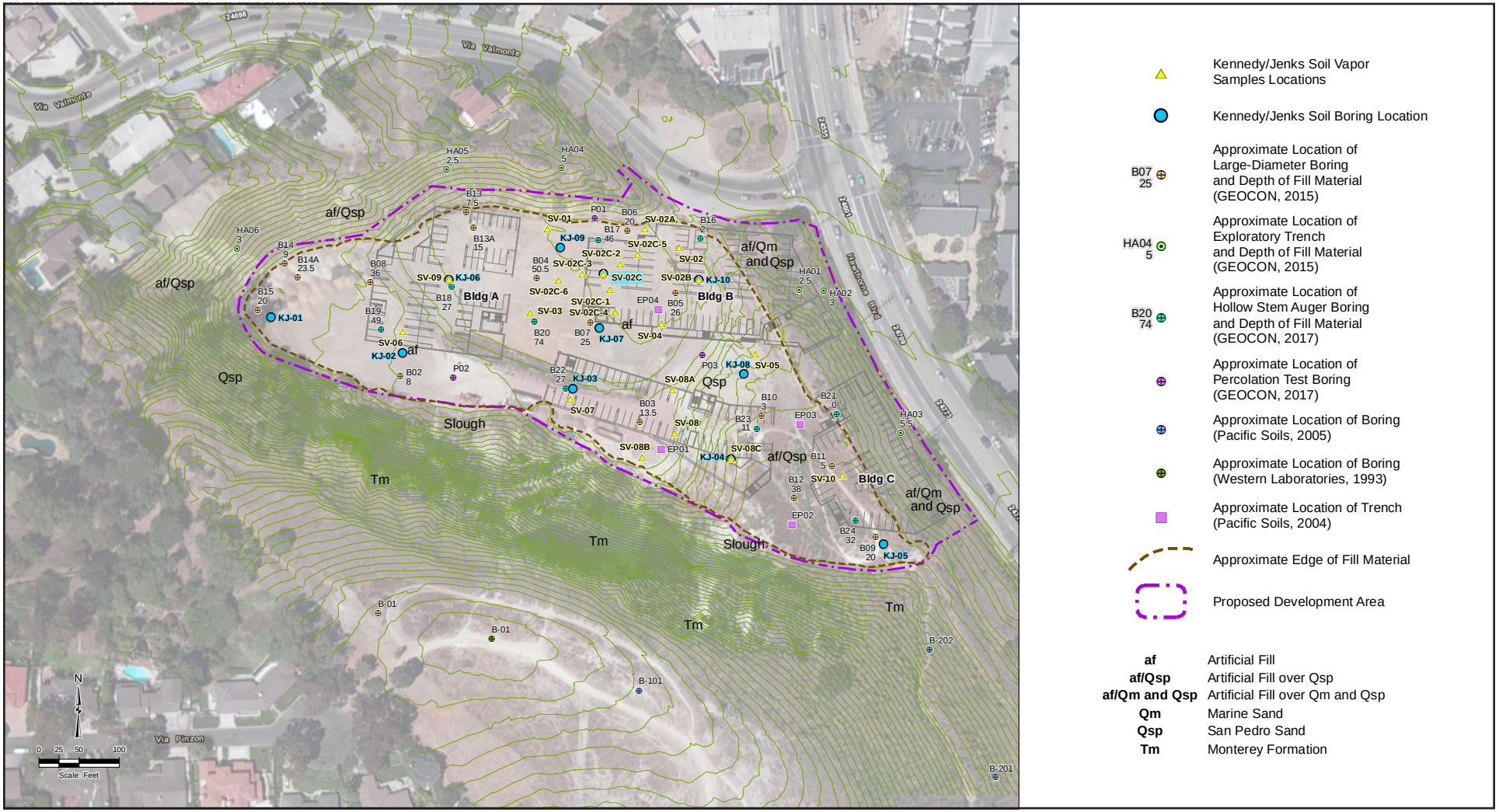

Source: Kennedy/Jenks Consultants, 2015

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Soil Testing Results

A total of 23 soil samples were collected that analyzed for 167 constituents of concern. A total of 38 detections were found, only six of which exceeded applicable screening levels.

Metals

Two metals were identified at concentrations above RSLs: arsenic and hexavalent chromium. Arsenic was identified at concentrations exceeding the DTSC established background level of 12 mg/kg in one of 20 detections. The maximum concentration was 28.3 mg/kg from boring KJ-02 in the southwest part of the development area in Zone 2 at a depth of 25 feet bgs. A soil sample collected closer to the surface at this location in Zone 1 at a depth of 5.5 feet was below the level of concern. This detection appears to be an isolated detection rather than a point source of arsenic.

Hexavalent chromium was detected in three samples at concentrations ranging from 0.47 to 1.1 mg/kg, all of which are above the RSL of 0.3 mg/kg. The samples were found in three of the 20 borings (KJ-01, KJ-07, and KJ-09) at depths of 5.5, 15 and 15.5 feet in various parts of the development area of the project site. As the boring location are not co-located, the hexavalent chromium appears to be isolated detections rather than a point source release, as would be the case if samples were identified in immediate proximity to one another.

Semi-Volatile Organic Compounds and Polycyclic Aromatic Hydrocarbons

Three polycyclic aromatic hydrocarbons were identified at concentrations above their respective RSLs.

- Benzo(a)anthracene was detected at a concentration of 1,500 µg/kg in one sample, above the RSL of 1,100 µg/kg; and at a concentration of 12 µg/kg in a second sample, below the RSL.
- Benzo(a)pyrene was detected in one sample at a concentration 1,100 µg/kg, above the RSL of 110 µg/kg; and in a second sample at a concentration of 18 µg/kg, below the RSL.
- Benzo(b)fluoranthene was detected in one sample at a concentration of 1,200 µg/kg, exceeding the RSL of 1,100 ug/kg; and in a second sample at a concentration of 12 µg/kg.

All of the detections at concentrations above RSLs were from one sample from boring KJ-02, collected from 5.5 feet bgs in the southwest part of the project site and therefore do not appear to represent a significant site-contamination source due to the isolated nature of the contamination.

Polychlorinated Biphenyls

One polychlorinated biphenyl (PCB), Aroclor, was detected in one sample at a concentration of 340 µg/kg, above the RSL of 240 µg/kg. As this finding was one individual instance and was isolated, this detection does not appear to be a significant source of PCBs.

Table 5.7-2, *Fill Material Investigation Soil Contaminants in Excess of Screening Levels*, summarizes soil contaminants in excess of the regional screening levels or DTSC screening levels, as discussed above.

Table 5.7-2 Fill Material Investigation Soil Contaminants in Excess of Screening Levels

Contaminant	Highest Measured Concentration	RSL	DTSC SL
Arsenic	28.3 mg/kg	n/a	12 mg/kg
Hexavalent Chromium	1.1	0.3 mg/kg	n/a
Benzo(a)anthracene	1,500 µg/kg	1,100 µg/kg	n/a
Benzo(a)pyrene	1,100 µg/kg	110 µg/kg	n/a
Benzo(b)fluoranthene	1,200 µg/kg	1,100 ug/kg	n/a
Aroclor	340 µg/kg	240 µg/kg	n/a

Kennedy Jenks, 2018

Soil Vapor Testing Results

A total of 46 soil vapor samples were collected and analyzed for 69 different VOCs. Eight detections of VOCs exceeded applicable screening levels out of the 23 detections.

Tetrachloroethylene

Six detections of tetrachloroethylene (PCE) exceeded the screening level of 0.46 µg/l out of 18 detections. Concentrations ranged from 0.034 to 5.46 µg/l. All detections exceeding the screening level were in the vicinity of boring SV-02C-3, in the north-central part of the area planned for development on the project site. The results were thought to represent a limited area of VOC-impacted soil imported during the final stages of backfilling brought in from various small construction sites around the Palos Verdes Peninsula.

Dichloro-difluoromethane

One detection of dichloro-difluoromethane was at a concentration of 850 µg/l, above the screening level of 100 µg/l. Eight other detections were at concentrations below the screening level. The dichloro-difluoromethane detected was in the vicinity of boring SV-02C-3, and is also thought to represent a limited area of VOC-impacted soil.

Benzene

Benzene was detected in two samples; one of these, with a concentration of 0.15 µg/l, exceeded the screening level of 0.097 µg/l. The two samples were from separate borings and thus appear to be isolated detections rather than a point source release.

Table 5.7-3, *Fill Material Investigation Soil Vapor Contaminants in Excess of Screening Levels*, summarizes soil vapor contaminants in excess of applicable screening levels, as discussed above.

Table 5.7-3 Fill Material Soil Vapor Contaminants in Excess of Screening Levels

Contaminant	Highest Measured Concentration	Screening Level
Tetrachloroethylene (PCE)	5.46 µg/l	0.46 µg/l
Dichloro-difluoromethane	850 µg/l	100 µg/l
Benzene	0.15 µg/l	0.097 µg/l

Kennedy/Jenks 2018

As soil and soil vapor contaminant levels are higher than the screening levels, a site-specific human health risk assessment is necessary to evaluate the potential for unacceptable risks if the project site were redeveloped for residential use without any mitigation.

Screening-Level Human Health Risk Assessment

Since a number of sample results exceed the RSLs and DTSC SLs, a screening - level Human Health Risk Assessment (HHRA) was conducted consistent with DTSC HERO HHRA Note 4 - October 2016. The majority of the soil and soil gas sample results from the environmental investigations in the project site—as part of the CLRRA investigation and summarized in the Report of Findings—were below applicable screening levels. The small percentage of samples that did exceed risk-based screening levels were primarily in Zone 1. The sporadic occurrence and relatively low concentration of detected constituents appear to be consistent with material imported from local construction sites and placed primarily into the upper portion of the former quarry pit.

Based on the planned future land use, risks were calculated assuming residential exposure scenarios. Soil screening levels included potential exposure via soil ingestion, dermal exposure, and inhalation of particulates and volatilization to outdoor air. The soil screening levels do not account for exposure to indoor air due to vapor intrusion, which is evaluated using soil vapor screening levels for the soil gas results. In the screening level risk assessment, the maximum detected concentrations were used as the exposure point concentrations for both the soil and soil vapor samples.

Screening-level risks were calculated for noncancer and cancer toxic effects on target organ systems. The noncancer screening-level risks were calculated by dividing the maximum detected concentration by the noncancer screening level. The cancer screening-level risks were calculated by dividing the maximum detected concentration by the cancer screening level and multiplying by 0.000001, or 1 x 10^{-6}. The noncancer screening-level risks were summed for all chemicals to calculate the cumulative hazard index for both soil and soil vapor. The cumulative hazard index was compared with DTSC's target residential screening level hazard index of 1. The cancer screening-level risks were summed for all chemicals to calculate the cumulative cancer risk for both soil and soil vapor. The cumulative cancer risk was compared with DTSC's target screening level cancer risk of 1 x 10^{-6}. The risk driver for both the hazard index and the carcinogenic risk was arsenic, which was found above naturally occurring background levels in one soil sample at a depth of 25 feet. DTSC established a regional background arsenic concentration of 12 mg/kg in soil that can be used as a screening tool for sites throughout Southern California. If arsenic is not included, the hazard index is below the level of concern, and the carcinogenic risk decreases to 1.72 E-05, which is below the cancer screening level risk of 1 x 10^{-6}.

For soil, the cumulative hazard index of 73 is higher than DTSC's target hazard index, indicating the potential for adverse noncancer effects. The cumulative cancer risk of 3 x 10-4 is higher than DTSC's target cancer risk, indicating the potential for unacceptable cancer risks. The noncancer hazard and cancer risks are primarily due to arsenic. Hexavalent chromium and benzo(a)pyrene also have cancer risks slightly above DTSC's target cancer risk.

Soil vapor screening levels were derived from the indoor air screening levels using DTSC's default attenuation factor. Because the land use is future residential, the default attenuation factor of 0.001 was used (DTSC 2011).

The DTSC is also utilizing an attenuation factor of 0.03 recommended by EPA for protecting indoor air concentrations. Until the new factor is officially implemented, DTSC recommends soil vapor data be screened by using both the current (0.001) and pending (0.003) attenuation factor to calculate vapor intrusion.

For soil vapor, the cumulative hazard index of 1 is equal to DTSC's target hazard index, indicating that adverse noncancer effects are unlikely. The cumulative cancer risk of 1×10^{-5} is higher than DTSC's target cancer risk, indicating the potential for unacceptable cancer risks. The cancer risk is primarily due to tetrachloroethene (PCE), which was detected in 6 out of 46 soil gas samples; benzene also has a cancer risk slightly above DTSC's target cancer risk.

The screening level risk assessment was conducted to evaluate risks from chemicals in soil and soil vapor at the development area under future residential uses. The risks from chemicals in soil and soil vapor are higher than DTSC's target risk levels, indicating the potential for unacceptable risks if the development area were redeveloped for residential use without any mitigation. However, screening-level risk assessments are intended to be conservative, so the results do not necessarily determine that an unacceptable risk exists at the development area and this would be considered a significant impact. The potential unacceptable risks associated with future residential use could be mitigated by minimizing or eliminating the exposure pathways to soil and soil vapor in the development area.

The Report of Findings did not include a recommended remediation measure for controlling potential hazardous materials release from soil and soil vapors, but outlined potential solutions, such as a vapor barrier, cap, or land use restrictions, under the proposed project development area to reduce human health risks to building occupants. The project would involve a clean cap of soil below the residential structures, which will consist of native soil from onsite. A Response Plan would be developed that would include specific information pertaining to the soil cap that would be implemented during project development, including the minimum thickness of the cap. This impact is potentially significant without mitigation.

Impact 5.7-4 Project construction and operation would not involve hazardous emissions or use of hazardous materials posing substantial health risks to persons at schools within 0.25 mile of the project site. [Threshold H-3]

One school is within 0.25 mile of the project site, Walteria Elementary School at 24456 Madison Street in Torrance, about 1,150 feet to the northeast. Project operation would involve use of only small amounts of hazardous materials that would not pose substantial hazards to persons at the school. Dust generated as a result of grading and development operations would potentially contain contaminated fill material listed in the preceding sections. Dust generation and control measures would be further addressed in the Response Plan, and would be controlled with Construction BMPs involving regular, routine watering of the site to ensure participate matter does not become airborne, as discussed in Section 5-2, Air Quality. Project construction would generate diesel emissions which are considered hazardous. However, the project construction period would be temporary, lasting approximately 2.5 years. Health risk is based upon the conservative assumption that exposure is continuous over a 70-year lifetime. A risk determination is not appropriate for short-term construction activities. Exposure to airborne particulate matter during grading and construction operations would be controlled via Construction BMPs. Additionally, dust generation and control measures would be

further discussed in the Response Plan to ensure silica dust and other matter would not pose a threat. Exposure to diesel exhaust during the construction period would not pose substantial hazards to persons at Walteria Elementary School. In addition, the truck route is along Hawthorne Boulevard and does not include Madison Street. Impacts would be less than significant.

5.7.1.4 CUMULATIVE IMPACTS

The area considered for cumulative hazardous materials impacts is the City of Torrance, the service area of the Torrance Fire Department, which manages four hazardous materials programs in the city. Construction and operation of other projects in Torrance would use hazardous materials and thus could pose hazards to people or the environment. Other projects would use hazardous materials in accordance with the same laws and regulations described above. Cumulative impacts would be less than significant after regulatory compliance, and project impacts would not be cumulatively considerable.

5.7.1.5 EXISTING REGULATIONS

Federal

- United States Code Title 42 Sections 9601 et seq.: Comprehensive Environmental Response, Compensation and Liability Act and Superfund Amendments and Reauthorization Act
- United States Code Title 42, Sections 6901 et seq.: Resource Conservation and Recovery Act
- United States Code Title 42 Sections 11001 et seq: Emergency Planning & Community Right to Know Act
- United States Code Title 49 Sections 5101 et seq.: Hazardous Materials Transportation Act

State

- California Health and Safety Code Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory)
- California Code of Regulations, Title 19, Section 2729: Business Emergency Plans
- California Building Code (California Code of Regulations, Title 24, Part 2)
- California Fire Code (California Code of Regulations, Title 24, Part 9)

5.7.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant 5.7-1, 5.7-2, and 5.7-4.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.7-3:** Fill material within the development area from uncontrolled backfilling, including material from the former Shell site could cause a significant hazard to the environment with implementation of the proposed project.

5.7.1.7 MITIGATION MEASURES

Impact 5.7-3

HAZ-1 Prior to issuance of any permit by the City of Torrance, the project applicant shall enter into a Land Use Covenant (LUC) Agreement with the DTSC, pursuant to the CLRRA between the same parties, and have that LUC recorded by the Los Angeles County Registrar/Recorder-County Clerk. The LUC shall specify the following:

- The Applicant shall develop a Response Plan and comply with the provisions contained therein as reviewed and approved by DTSC. The Response Plan will be subject to DTSC's public notice requirements, which at a minimum will include the development of a community profile and the distribution of a 30-day public review notice. The Response Plan protective features shall include, but not limited to, the following features.
- The hazardous materials in soil and soil vapor which are identified as posing potentially unacceptable human health risks in the Fill Material Investigation described in the Report of Findings for the project site completed by Kennedy/Jenks Consultants in August 2018.
- Engineering controls will be developed in consultation with DTSC, which are required to prevent vapor intrusion from backfill soil in the mine pit into the proposed buildings at concentrations that could pose substantial health risks. The preliminary selection of engineering control is a vapor barrier cap or subslab liner. A subslab liner alone may not be sufficient to reduce vapor intrusion to acceptable levels; thus, DTSC may require one or both of the following additional options:
  - A subslab venting system under residential buildings, which typically consists of venting material (sand or gravel) below the subslab liner to allow soil gas to diffuse laterally to collection pipes for discharge to the atmosphere.
  - A subslab depressurization system under residential, typically consisting of a motorized blower to lower the air pressure under the building, which inhibits soil gases from entering the building, plus a series of collection and discharge pipes.
- The DTSC shall monitor the construction of the mitigation system and the occupancy permit shall not be issued until the DTSC certifies the site as safe for occupancy.
- An Operations and Maintenance (O&M) Monitoring Plan for the engineering controls. The O&M Plan shall:
  - Require periodic monitoring of the engineering control in perpetuity.
  - Require the applicant to provide a dedicated funding source for such perpetual monitoring.
  - Identify the O&M Professional, who must be a California-registered civil engineer or engineering geologist, and who will be responsible for: (1) inspecting and

monitoring the engineering controls; (2) five-year reviews; (3) preparing and signing Annual Inspection Reports and Five-Year Review Reports; and (4) preparing and signing Completion Reports for intrusive activities and cap.

- Provide the O&M Professional with right of access to the property required to carry out their duties.

- Institutional controls including, but not limited to, the following:
  - Tenants and prospective tenants shall be provided written notification of the hazardous materials in soils under the proposed development and the Land Use Covenant, engineering controls, and institutional controls in place to reduce entailing human health risks.
  - Prohibition on activities, such as drilling or excavating, that could damage the subslab liner.
  - Prohibition on activities that would disturb impacted soil without DTSC approval
  - Inspection and reporting requirements for the engineering controls in adherence to DTSC regulations.
  - Provide DTSC with right of access to the property to inspect and monitor the engineering controls.
  - Provide written notification to future buyers and tenants of the property of prohibited activities and the reasons for such prohibition.
  - A soil management plan shall be prepared that provides procedures for the effective handling of soil onsite and prompt communication of the discovery of unknown environmental features.

HAZ- 2 The Applicant or his contractor shall prepare a dust control plan consistent with the requirements of SCAQMD Rule 1466-Control of Particulate Emissions from Soils with Toxic Air Contaminants. The Dust Control Plan shall include at a minimum:

- As approved by the SCAQMD, ambient PM10 monitoring, dust control measures, notification, signage, and recordkeeping requirements.
- Alternative dust control measures, ambient dust concentration limits, and other provisions may be implemented upon approval of the SCAQMD by the Executive Officer.
- In the event that a limited soil excavation is required during implementation of the Response Plan, as discussed in Section 5-2.21, Construction Emissions, of the Air Quality chapter, contingencies for soil excavation shall include adherence to all applicable Construction BMPs and regulatory standards.

5.7.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impact 5.7-3

Soil and soil vapor in the backfilled mine pit are contaminated with hazardous materials at concentrations that could pose potential human health risks. The implementation of engineering controls, including operation and maintenance, and institutional controls, would enact a land use covenant at the project site to prevent vapor intrusion into the site. Additionally, a soil cap of depth to be specified in the Response Plan would be implemented at the project site to protect building occupants. Mitigation Measure HAZ-2 would ensure that potential toxic fugitive dust would not pose a risk to human health by monitoring PM_{10} levels during excavation activities, and utilizing appropriate dust suppressant BMPs to ensure that fugitive dust is minimized and exposure is reduced to less than significant levels. In addition, Mitigation Measure GEO-1 would be implemented to reduce potential impacts. Impacts would be less than significant after implementation of Mitigation Measures HAZ-1, HAZ-2, and GEO-1.

5.7.2 Wildfire and Emergency Response Planning

Wildfire risk is defined here as the likelihood of a fire times the consequences of a fire, where consequences include the intensity of a fire; resources—such as people, structures, cultural resources, habitat, and forestry resources—exposed to a fire; and the effects of a fire on those resources. Wildfire likelihood and intensity are considered together qualitatively as wildfire potential, which depends on three main factors: fuel (wildland vegetation), topography, and weather. The discussion of effects in this section focuses on adverse effects of wildfires.

5.7.2.1 ENVIRONMENTAL SETTING

Regulatory Background

State Regulations

Fire Hazard Severity Zones

The California Department of Forestry and Fire Protection (CAL FIRE) designates fire hazard severity zones as authorized under California Government Code Sections 51175 et seq. CAL FIRE considers many factors such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather for the area. There are three hazard zones in state responsibility areas: moderate, high and very high. CAL FIRE designates fire hazard severity zones (FHSZ) within three types of areas, depending on what level of government is financially responsible for fire protection:

- LRA: Local Responsibility Area—cities and counties are financially responsible for wildfire protection
- SRA: State Responsibility Area
- FRA: Federal Responsibility Area

Local

Building Code

The California Building Standards Code (CBC), contained in Part 2 of 24 CCR, identifies building design standards, including those for fire safety. The CBC is based on the International Building Code but has been amended for California conditions. The CBC is updated every three years, and the current 2016 CBC went into effect January 1, 2017. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new residential, high rise, and hazardous materials buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Emergency Management Agency

The Governor's Office of Emergency Services (Cal OES) was established as part of the Governor's Office on January 1, 2009—created by Assembly Bill (AB) 38 (Nava), which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall state agency response to major disasters in support of local government. The agency is responsible for ensuring the state's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

Department of Forestry and Fire Protection

CAL FIRE has mapped fire threat potential throughout California (CAL FIRE 2018). CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, CAL FIRE produced the 2018 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments (CAL FIRE 2018).

Fire Code

The California Fire Code (CFC), in Part 9 of 24 CCR, incorporates by adoption the International Fire Code of the International Code Council, with California amendments. The CFC is updated every 3 years, and the current 2016 CFC went into effect January 1, 2017. It is effective statewide but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. The CFC regulates building standards set forth in the CBC, fire department access, fire protection systems and devices, fire and explosion hazards safety, hazardous materials storage and use, and standards for building inspection.

Building Standards for Structures in Fire Hazard Severity Zones

California Building Code, Chapter 7A

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a Fire Hazard Severity Zone. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. The CBC is updated on a three-year cycle; the current 2016 CBC took effect in January 2017.

California Fire Code, Chapter 49

Chapter 49 of the CFC, Requirements for Wildland-Urban Interface Fire Areas, prescribes construction materials and methods in fire hazard severity zones; requirements generally parallel CBC Chapter 7A. The CFC is updated on a three-year cycle; the current 2016 CFC took effect in January 2017.

Defensible Space

California Public Resources Code Sections 4291 et seq. requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be removed. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability may be maintained, as may single specimens of trees or other vegetation that are maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Requirements regarding hazardous vegetation and fuel management are also contained in Sections 4906 and 4907 of the California Fire Code.

California Public Resources Code Section 4290 requires that all parcels one acre or larger shall provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road.

City of Torrance

The 2016 CBC is adopted with certain modifications as Sections 81.1.1 et seq. of the City of Torrance Municipal Code.

The 2016 CFC is adopted with certain modifications as Sections 85.1.010 et. seq. of the City of Torrance Municipal Code.

Existing Conditions

Wildfire Background

A wildfire is an unplanned ignition in the wildland. Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral, sage scrub, and desert scrub), and grassland (CAL FIRE 1999). Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in two ways: 1, woody root crowns or burls below the soil surface survive a fire and resprout; and 2, shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire produce seeds requiring intense heat from a fire to germinate (Santa Barbara City College 2010). Many species of conifers have seed cones requiring fire to open (CAL FIRE 1999).

Although the term *wildfire* may suggest natural origins, humans were responsible for igniting 84 percent of wildfires in the United States between 1992 and 2012 (Balch, Jennifer, et al. 2017). The three most common

types of causes of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.), arson, and equipment use (PBI 2007).[4] Lightning is the major natural cause of wildfire in the United States (Balch, Jennifer, et al. 2017).

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires occurred within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters (PBI 2007).

CAL FIRE determined that 16 wildfires in northern California in October 2017 were caused by electric power and distribution lines, conductors, and the failure of power poles (CAL FIRE 2018a, 2018b).

Wildfire Trends in Recent Decades

Wildfire season in the West recently has lengthened from an average of five to seven months, and the number of large wildfires (>1,000 acres) has increased from 140 to 250 per year. This is occurring as average annual temperatures in the West have risen by nearly two degrees Fahrenheit since the 1970s and the winter snow pack has declined. Increases in acres burning can now be attributed, in part, to climate change (GEOS 2018). Wildfires now burn year-round in California (SBFFP and CAL FIRE 2018). Warming and drying due to human-caused climate change is estimated to have approximately doubled the total area burned by forest fire in the western United States between 1984 and 2015 compared to the total area expected to have burned without climate change (Abatzoglou and Williams 2016). Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate after fire—and increase invasion of nonnative grasses, that is, tend to convert native shrublands to nonnative grassland (USGS 2012). Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced; thus, such conversion exacerbates wildfire hazards (UC ANR 2009).[5]

Wildfire Suppression

Wildfire suppression involves a combination of passive measures, put in place before a fire starts, and active suppression measures. Active measures involve fire engines, crews, bulldozers, airplanes, helicopters, and command elements. Passive measures consist of defensible space, fire-resistant landscaping, fire resistant construction, good housekeeping, sufficient water onsite for firefighting, egress routes for evacuating residents, and ingress routes for firefighters (LACCEO 2014).

Wildfire suppression strategy in Los Angeles County is centered on an aggressive initial attack aimed at quickly extinguishing the fire. Suppression efforts begin with establishing a secure starting point (anchoring). Firefighters attack the fire from the sides (flanking). Firefighting resources are committed to protecting assets in front of the fire, while additional resources are moved into areas the primary fire has already passed through

[4] Miscellaneous human activities (unspecified) is ranked above equipment use in percentage of wildfires caused.

[5] Nonnative annual grasses are more flammable than trees and shrubs because the grasses complete their life cycle in the winter and spring, leaving highly flammable dead plant material in the summer and fall fire season, and because they burn in a wider variety of weather conditions than native shrubs and trees do. See UC ANR 2009.

to protect assets from residual embers and fire (LACCEO 2014). Controlled fires, or burnouts, are used in establishing fire lines and, in some cases, to consume fuel between a fire line and the edge of the fire.

After a fire is contained within a fire line, firefighters extinguish hot spots near the fire line with water from fire engines and helicopters. Ground crews then move through the burned area with water and hoes extinguishing hot or glowing embers and checking under stumps and logs for embers (Idaho Firewise 2018).

While wildfire is a necessary component of local ecosystems, in most cases, unchecked wildfire is no longer a viable fire/fuel management option in Los Angeles County due to the widespread intermixing of developed land uses in wildlands. Uncontrolled fires must be quickly extinguished. Prescribed or controlled burns are used in place of uncontrolled wildfire (LACCEO 2014).

Debris Flows After Wildfire

Postfire landslide hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high intensity rainfall events, and flows that are generated over longer time periods that are accompanied by root decay and loss of soil strength. Post-fire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles.

Fires increase the potential for debris flows in two ways:

1. Fires may bake soil into a hard crust that repels water.
2. Fires destroy vegetation that would slow and absorb rainfall and whose roots would help stabilize soil. (USGS 2018)

Post-fire debris flows are most common in the two years after a fire. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas. In southern California, as little as 0.3 inch of rainfall in 30 minutes has triggered debris flows, and any storm that has intensities greater than about 0.4 inch per hour can produce debris flows (USGS 2017). The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses (CGS 2018a).

Debris flows killed 23 people in Montecito in Santa Barbara County in January 2018 after the Thomas Fire burned near the area in December 2017 (CGS 2018b).

Wildfire Effects

Wildfire Spread to Structures

Wildfires ignite structures three ways: burning embers landing on the structure or flammable material next to the structure; direct flame contact; and radiant heat from fire close to the structure (IBHS 2018). Embers are the most important cause of home ignition. Two out of every three homes destroyed during the 2007 Witch Creek fire in San Diego County were ignited either directly or indirectly by wind-dispersed, wildfire-generated, burning or glowing embers and not from the actual flames of the fire (FIRESafe MARIN 2018). Embers ignite

structures by entering through attic vents, igniting flammable materials around the home (litter in the roof gutter, wood stacks, or wood fencing), or finding their way under roofing materials (California Chaparral Institute 2018).

Wildland-Urban Interface

A wildland urban interface (WUI) is any area where structures and other human developments meet or intermingle with wildland vegetative fuels—the shrubs, trees and grasses. These plants and wildland areas have evolved over time to burn (San Mateo County Sheriff's Office 2015). The Association of Bay Area Governments defines the WUI as communities within 1.5 miles of a potential wildfire source as determined by CAL FIRE (ABAG 2011).

Developments in the wildland-urban interface exacerbate fire occurrence and fire spread in several ways.

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to build-up of fuel and increasing wildfire hazard further. (Radeloff, Volker, et al., 2018)
- Increased fire frequency tends to eliminate native shrubs, which are replaced by weedy, highly flammable annual grasslands. (USGS 2012)

CAL FIRE estimated in 2010 that there were about three million housing units in California in fire hazard severity zones and potentially at risk from wildland fire—that is, just over 20 percent of the total housing units in the state (SBFFP and CAL FIRE 2018).

Development of Infrastructure and Wildfire Risk

Developments in or near fire hazard severity zones require the construction and installation of infrastructure including roads and power lines. Development of such infrastructure may increase wildfire risks in the affected areas (see the discussions of roads and power lines, above).

Air Pollution from Wildfire

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into the lungs. They can cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is even linked to premature death. Some populations are more sensitive than others to smoke—for instance, people with heart or lung diseases, the elderly, children, people with diabetes, and pregnant women (Airnow 2018).

During the Camp Fire in Butte County, California, in November 2018, portions of northern California were identified as having the worst air pollution in the world (Vox.com 2018).

Benefits of Wildfire

Wildfires have several favorable effects, including removing underbrush and debris including dead plant material, thus providing space and sunlight for new grasses, herbs, and shrubs and aiding regeneration of fire-dependent plant species (CAL FIRE 2013a). The discussion of wildfire risks in this section focuses mainly on adverse effects of wildfire. See also the description of wildfire strategy in Los Angeles County, above, which focuses on rapidly extinguishing fires.

Reducing Wildfire Risks

Design or retrofit features for minimizing wildfire risks to new or existing structures include ember-resistant attic vents, nonflammable roofing, and exterior under-eave or rooftop sprinklers (California Chaparral Institute 2018). Nonflammable roofing materials include asphalt fiberglass composition shingles and concrete or clay tiles (IBHS 2018).

Wildfire risks to structures are also decreased via reduction of vegetation, usually within 100 feet of a structure. CAL FIRE divides this 100-foot buffer into two zones:

- A "Lean, Clean, and Green Zone" within 30 feet of the structure. This zone should be clear of all flammable vegetation and dead or dying plants; all trees and vegetation in this zone should be well pruned and maintained.
- A "Reduced Fuel Zone" extending the remaining 70 feet. Surface litter—such as fallen leaves, twigs, bark, etc.—in this zone should not exceed a depth of three inches. Horizontal spacing must be maintained between shrubs and trees; the amount of spacing depends on the grade of the slope and the size of the plants. (CAL FIRE 2013b)

Wildfire Potential in the Project Region

The probability of future wildfires in the City of Palos Verdes Estates is considered low; however, the severity of such events is considered high, per the City of Palos Verdes Estate's Local Hazard Mitigation Plan (PVE 2018).

Chaparral and coastal sage scrub vegetation in the region are highly flammable. Many chaparral species require fire to spawn regeneration. Many species invite fire through the production of plant materials with large surface-to-volume ratios, volatile oils, and through periodic die-back of vegetation (PVE and RHE 2013).

Areas where annual precipitation is less than 30 inches per year are extremely fire susceptible. High-risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity. The so-called "Santa Ana" winds create a particularly high risk, as they can rapidly spread what might otherwise be a small fire. Topography influences the movement of air, thereby directing a fire course. For example, the rate of wildfire spread upslope is proportional to the grade of the slope. Gulches and canyons can funnel air and act as chimneys, which intensify fire behavior and cause the fire to spread faster (PVE and RHE 2013).

The entire cities of Palos Verdes Estates and Rolling Hills Estates are designated Very High Fire Hazard Severity Zones (VHFHSZs) (CAL FIRE 2011a, 2011b). In January 2018 there were an estimated 5,298 housing units in Palos Verdes Estates and 3,101 housing units in Rolling Hills Estates (CDF 2018). Numbers of nonresidential structures in the cities are unavailable; however, in 2015, there were 2,313 workers in Palos Verdes Estates and 4,174 workers in Rolling Hills Estates (USCB 2019). On the Palos Verdes Peninsula, the entire city of Rolling Hills and nearly the entire city of Rancho Palos Verdes are also designated VHFHSZs, along with some small areas of the Community of San Pedro in the City of Los Angeles (CAL FIRE 2011c). The nearest proposed apartment building would be approximately 295 feet northeast of the VHFHSZ. Project development would place residents near a wildfire hazard zone.

Wildfire History of the Palos Verdes Peninsula

The following fires are identified in the Local Hazard Mitigation Plan for the cities of Palos Verdes Estates and Rolling Hills Estates:

1923 brush fire, 4,000 acres

1967 45 acres in Portuguese Bend area

1973 900 acres; 24 structures destroyed

2005 200 acres

2009 230 acres; damaged 6 houses

2012 15 acres (PVE and RHE 2013)

Project Site

The project site is not in a Fire Hazard Severity Zone. However, the current project-site vegetation consists of California sagebrush, nonnative grassland, ornamental vegetation, toyon chaparral, and upland mustards semi-native stands (Dudek 2017), all of which could fuel a wildfire. Most of the project site burned in a 1946 fire that burned 385 acres extending from the project site east about 1.8 miles to the present-day Rolling Hills Golf Course (Data Basin 2019)[6].

Firefighting Resources

The Torrance Fire Department would provide fire protection and emergency medical services to the project. The three closest TFD fire stations to the project site are Station 2 at 25135 Robinson Way, approximately 0.7 mile east of the site, Station 4, at 5205 Calle Mayor, approximately 1.4 miles to the northwest, and Station 6, at 21401 Del Amo Circle, approximately 2.35 miles to the north (TFD 2017). Equipment at these stations include an engine company and paramedic assessment at Station 2; an engine company and paramedic rescue at Station 4; and an engine company, ladder truck company and paramedic rescue at Station 6. Preliminary response would

[6] The 1946 Fire was not listed under the Local Hazard Mitigation Plan for the cities of Palos Verdes Estates and Rolling Hills Estates; however, it was recorded under United States Department of Agriculture Forest Service Fire History Data from 19250 to 2007.

come from stations closest to the project site, and additional response from the ladder company at Station 6 to assist in multi-story fires.

The Los Angeles County Fire Department serves the cities of Palos Verdes Estates and Rolling Hills Estates. The two nearest LACoFD stations to the site are Station 106 at 27413 Indian Peak Road in the City of Rolling Hills Estates, approximately 2.2 miles to the southwest; and Station 2 at 340 Palos Verdes Drive West in the City of Palos Verdes Estates, approximately 2.2 miles to the west (USGS 2017). The LACoFD is one of the largest emergency service agencies in the world.

Fire suppression is an integrated, inter-agency effort. The state is divided into six regions in the California Fire Service and Rescue Emergency Mutual Aid System established by the California Office of Emergency Services (Cal OES). Los Angeles County is in Region 1, consisting of coastal counties from Orange County north to San Luis Obispo County. In the event assistance is needed from other agencies, mutual aid would be lent by other agencies in Region 1 first, then other regions in California.[7]

Fire hazard severity zones are divided into Local Responsibility Areas (LRA), State Responsibility Areas (SRA), and Federal Responsibility Areas (FRA), based on the level of government with financial responsibility for wildland fire protection. LACoFD contracts with the State to provide fire protection in SRA in Los Angeles County. There are 515,817 acres of SRA in LACoFD's jurisdiction. All of the FHSZs in the Palos Verdes Peninsula are within LRA (LACCEO 2014).

Emergency Response Planning

Torrance Fire Department Emergency Services is charged with emergency response planning for the City, including prevention, preparedness, response, and recovery (Torrance 2009). The City of Torrance Emergency Operations Plan was updated in 2010. The City is currently updating its Local Hazard Mitigation Plan (LHMP); a public review draft LHMP was issued by the City in September 2016. Hawthorne Boulevard is identified as an evacuation route in the LHMP (Torrance 2016).

5.7.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would: [8]

H-5 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-6 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire

[7] In many other counties mutual aid would be lent by other agencies in the county first, then other agencies in the region. However, as the LACoFD is one of the largest public safety agencies in the world, mutual aid is expected to be lent by other agencies in Region 1 first.

[8] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018, and include the Wildfire thresholds in addition to Hazards thresholds.

H-7 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment

H-8 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

5.7.2.3 ENVIRONMENTAL IMPACTS

The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.7.5: Project construction could impede emergency access to properties by way of Via Valmonte west and northwest of the project site; Operation of the project would not impede emergency access or interfere with an adopted emergency response plan. [Threshold H-5]

Construction of the proposed project is anticipated to require 29 months and would consist of the following phases:

- Grading: 4 months
- Building Construction, Parking Garage: 7 months
- Paving: 2 months
- Building Construction, Residential (above parking): 18 months
- Application of Architectural Coatings: 3 months

The 4-month grading phase will include site grading, remediation, temporary shoring, and installation of utilities. The temporary shoring would be approximately 125 feet long.

Grading is currently estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. Assuming a haul truck capacity of 16 CY per truck, earth-moving activities would result in approximately 7,455 round trips (14,910 one-way truck trips) during the grading phase. Construction staging on City streets could potentially impede emergency access to surrounding neighborhoods. Based on these possibilities, there will be a potentially significant impact without mitigation.

Operation of the project would not impede emergency access. Raised traffic movement barriers would be installed at the Via Valmonte driveway to allow emergency vehicles to access the property from Via Valmonte. The proposed roads and driveways would provide emergency access to all proposed buildings, conforming to CFC Section 503, as incorporated into the City's Municipal Code Section 85.2.060. On-site circulation would not result in significant impacts related to site access, vehicle-pedestrian conflicts, or emergency access; the project would not impede evacuation routes. Project implementation would comply with the City's Emergency Operations Plan. Operational impacts would be less than significant.

IMPACT 5.7-6: Project development would not exacerbate wildfire risks due to slope, prevailing winds, and other factors, and would not thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. [Threshold H-6]

Project development would not exacerbate wildfire risks. The project site consists mostly of nonnative grassland and disturbed area, with smaller areas of toyon chaparral, California sagebrush, upland mustards/seminatural stands, and ornamental vegetation; vegetation is sparse on the backfilled mine pit. The project site is bounded to the south and southeast by upland mustards, California sagebrush, toyon chaparral, and ornamental vegetation (Dudek 2016). Project development would include clearing vegetation from the project site. A 0.99-acre buffer along the sides of the development area would be maintained as a brush management zone pursuant to California Public Resources Code Sections 4291 et seq. and California Fire Code Chapter 49, Requirements for Wildland-Urban Interface Fire Areas. Building exteriors would consist of stucco and trespa, a laminate made of wood-based fiber and resin. Approximately 75 percent of the project site would be impervious surfaces, most of which are nonflammable.

The project site is below a steep slope, up to 250 feet high, from nearby FHSZs in the cities of Palos Verdes Estates and Rolling Hills Estates. The rate of wildfire spread on a slope is proportional to the grade upslope; thus, site topography would not exacerbate wildfire risk.

The nearest wind direction information to the project site available from the California Air Resources Board is for King Harbor in the City of Redondo Beach, about two miles northwest of the project site. The prevailing wind at King Harbor is from the west-southwest (CARB 2003). Areas west-southwest of the project site are in VHFHSZs in Palos Verdes Estates and Rolling Hills Estates.

Wildfire hazards in southern California are at their greatest when Santa Ana winds—hot, dry, northeasterly winds—are blowing, usually in autumn. Northeasterly winds would push a wildfire in VHFHSZ west and southwest of the project site further southwest, away from the project site.

Project development would not exacerbate wildfire risks in VHFHSZs upwind from the project site or within the project site, and thus would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Impacts would be less than significant.

Impact 5.7-7: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. [Threshold H-7]

Project development would not require construction of off-site infrastructure other than a short storm drain, water line, and sewer line segments from the project site to Via Valmonte and a short water line segment from the project site to Hawthorne Boulevard. The off-site infrastructure would be in roadways and would not exacerbate wildfire risks. Once completed, all water and wastewater line improvements in the roadway would be underground, and the roadway would be to its current repaved and expanded per updated project design specifications that would widen frontage roadway segments. During construction, standard conditions placed on encroachment permits that require notification of emergency services, paths of travel, and traffic

management will ensure that the roadways remain available for emergency evacuation. Project development would not involve construction of infrastructure into nearby FHSZs. Impacts would be less than significant.

Impact 5.7-8: 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. [Threshold H-8]

Project drainage and proposed drainage infrastructure are discussed further in Section 5.8, *Hydrology and Water Quality*, of this DEIR. The proposed project is at the base of steep slopes and is not upslope from developed properties. Slope stability for the proposed project respecting debris falling and rockfall are addressed in Section 5.5, *Geology and Soils*. The project includes rockfall barriers and would not pose a landslide hazard to people or structures downslope of the proposed project based on these and other project design measures. Impacts would be less than significant.

5.7.2.4 CUMULATIVE IMPACTS

The area considered for cumulative impacts regarding wildfire hazards is the Palos Verdes Peninsula (Peninsula). The Peninsula is surrounded by broad urbanized areas of the Los Angeles Basin to the north and east, and by the Pacific Ocean to the south and west, and thus the nearest FHSZs to the Peninsula are about 11 miles to the north in the Community of Westchester in the City of Los Angeles. Therefore, wildfire hazards in the Peninsula would not combine with hazards from nearby areas. Approximately 25 square miles of the Peninsula are designated VHFHSZs by CAL FIRE (CAL FIRE 2011c). Some other projects in the region would exacerbate wildfire hazards due to factors such as slope and prevailing winds. Thus, those projects could expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Some other projects could extend infrastructure such as roads and overhead power lines through VHFHSZs and thus could exacerbate wildfire risk. Some other projects could cause flooding or debris flows due to post-fire slope instability.

Other projects would be mandated to comply with requirements for building materials and construction methods for buildings in FHSZs set forth in the CBC and CFC; and requirements for defensible space set forth in the CFC and in California Public Resources Code Sections 4290 et seq.

All four incorporated cities on the Peninsula are served by the LACoFD. The majority of the LACoFD's operational budget is funded by property taxes and charges for services. Other projects would pay increased property taxes and charges for services; such payments would reduce cumulative wildfire hazard impacts. Cumulative wildfire hazard impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.7.2.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

State

- California Code of Regulations Title 24, Part 2: 2013 California Building Code
- California Code of Regulations Title 24, Part 9: 2013 California Fire Code
- California Public Resources Code Sections 4290 et seq.: setbacks; defensible space

City of Torrance

- Torrance Municipal Code Sections 81.1.1 et seq.: Building Code
- Torrance Municipal Code Sections 85.1.010 et seq.: Fire Code

5.7.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.7-6, 5.7-7, and 5.7-8.

Without mitigation, the following impact would be **potentially significant**:

- Impact 5.7-5 Construction staging along Via Valmonte and Hawthorne Boulevard could impede emergency access to the surrounding community, and specifically restrict access to residential homes located west and northwest of the project site.

5.7.2.7 MITIGATION MEASURES

Impact 5.7-4

Impact 5.7-5 would be mitigated by implementation of Mitigation Measure TR-1, identified below.

TR-1 Prior to the issuance of grading permits, the project applicant shall prepare a Construction Traffic Management Plan in coordination with the City of Torrance City Traffic Engineer. The Plan, at a minimum, shall include the following:

- All construction vehicles accessing the site shall be of legal weight, length, width and height unless oversize load permits are secured from the City and all other agencies through which loads will be carried.
- All trucks used in the construction of this project shall travel only on Truck Routes as defined in Section 61.9.2 of the Torrance Municipal Code.
- All construction traffic shall enter the site from the north via a right turn from southbound Hawthorne Boulevard. All construction traffic shall exit the site via a right turn onto Via Valmonte and then left turn onto northbound Hawthorne Boulevard. No traffic shall be allowed on Via Valmonte west of the site and no construction truck traffic shall be allowed to travel south on Hawthorne Boulevard.
- No construction vehicle(s) shall be allowed at any time to stage or queue on City streets or rights-of-way. All truck staging or queuing shall take place on-site.
- Vehicle parking for all workers at the site shall be accommodated on-site with no worker parking permitted on City streets. The developer shall provide areas for worker parking at all times during construction.

- Construction trucks shall not travel on any street within the City of Torrance on Saturdays and Sundays. Construction trucks shall not travel on any City street before 8:30 AM or after 4:00 PM on weekdays (Monday through Friday).
- Spillage of material of any kind from trucks is prohibited. All construction vehicles shall be enclosed and sealed to prevent any material spillage onto any street in the City.
- Trucks and truck wheels and tires shall be cleaned before entering City streets from the site to prevent any wheel tracking or deposition of material on any City street.
- Haul trucks entering or exiting public streets shall at all times yield to public traffic.
- If hauling operations cause any damage to existing pavement, street, curb and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer.
- All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and parking lots and will occur on-site.
- This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Torrance requirements.

5.7.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The mitigation measures would reduce potential impacts of wildfire hazards to less than significant. Project operation is not anticipated to create adverse impacts; project construction would follow all standards, regulations and best management practices. Applicable mitigation measures would ensure that construction vehicle staging would not impede emergency access to the site and surrounding community. Additionally, no significant unavoidable adverse impacts relating to wildfire hazards have been identified.

5.7.3 References

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5.8 HYDROLOGY AND WATER QUALITY

This section of the DEIR evaluates the potential impacts of the proposed project to hydrology and water quality conditions in the project's vicinity. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

The information in this section is based partly on the *Solana Torrance Preliminary Drainage Study* by KHR Associates, dated October 9, 2018. A complete copy of this technical study is included as Appendix G to this DEIR.

Ten comments relating to hydrology and water quality were received in response to the Initial Study / Notice of Preparation circulated for the proposed project. The potential impacts on water quality from construction and operation of the proposed development have been analyzed in this section.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY FRAMEWORK

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation.) Direct sources discharge directly to

receiving waters, and indirect sources discharge to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA 2012).

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator (such as a city) of a regulated municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., best management practices [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in post-construction runoff to the city's storm drain system from new development and redevelopment projects that result in the land disturbance of greater than or equal to one acre. The MS4 Permit covering most of Los Angeles County—except for the Antelope Valley and the part of the San Gabriel Mountains draining northward to the Mojave Desert—is Order No. R4-2012-0175 issued by the Los Angeles Regional Water Quality Control Board in 2012.

The City of Torrance Public Works Department, the Community Development Department, and the Fire Department have assigned staff to make sure the City is in compliance with the NPDES permit. Public Works handles the interagency liaisons, capital improvement projects relative to permit compliance, and water quality monitoring for compliance with total maximum daily loads (TMDLs)—that is, the maximum concentration of a pollutant allowed in a water body. Community Development handles the site inspections, implementation of BMPs, development plan checks, public education programs, and administration. The Fire Department serves as first responders for incidents related to runoff, illicit discharges, and hazardous spills and oversees the Commercial & Facilities Management Program, including inspections and enforcement (Torrance 2017).

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine Regional Water Quality Control Boards, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the

beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The City of Torrance is in the Los Angeles Basin, Region 4, in the Dominguez Watershed. The Water Quality Control Plan for the Los Angeles Basin was adopted in 2014. This Basin Plan gives direction on the beneficial uses of the state waters in Region 4, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.

Los Angeles County Low Impact Development Standards Manual

The County prepared the 2014 Low Impact Development Standards Manual (LID Manual) to comply with the requirements of the MS4 permit. The LID Manual is an update and compilation of the following documents:

- Development Planning for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan (September 2002)
- Technical Manual for Stormwater Best Management Practices in the County of Los Angeles (February 2004)
- Stormwater Best Management Practice Design and Maintenance Manual (August 2010)
- Low Impact Development Standards Manual (January 2009)

The LID Manual addresses the following objectives and goals:

- Lessen the adverse impacts of stormwater runoff from development and urban runoff on natural drainage systems, receiving waters, and other water bodies.
- Minimize pollutant loadings from impervious surfaces by requiring development projects to incorporate properly designed, technically appropriate BMPs and other LID strategies.
- Minimize erosion and other hydrologic impacts on all projects located within natural drainage systems that have not been improved by requiring projects to incorporate properly designed, technically appropriate hydromodification control development principles and technologies.

The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project's land plan.

Best Management Practices

Best management practices for minimizing water pollution are termed *measures* in the LID Manual and *best management practices* in the MS4 Permit; they are referred to as BMPs here.

- **Site Assessment** – the design of the proposed project drainage system and water quality components is based on an assessment of site layout, geotechnical conditions, local groundwater conditions, and existing drainage.

- **Site Design** – site design BMPs reduce or eliminate post-project runoff. Site design BMPs include protecting and restoring natural areas; minimizing land disturbance, and minimizing impervious area.

- **Source Control BMPs** - source control BMPs reduce the potential for pollutants to enter runoff. Source control BMPs are classified in two categories:

  - **Structural source control measures:** examples include roof runoff controls, protection of slopes and channels, efficient irrigation, and storm drain system signage.

  - **Nonstructural source control measures:** reduce the potential for pollutants resulting from activities onsite to enter runoff. Examples include education of owners and employees; activity restrictions, such as requiring that trash can lids be closed at all times and prohibiting outdoor cooking and car washing; and periodic inspections of water quality features such as catch basins and filters.

- **Treatment Control BMPs** - treatment control BMPs remove pollutants from contaminated stormwater before the water is discharged offsite. Examples include biofiltration through constructed project landscape elements such as bioswales, infiltration trenches, and/or infiltration basins; and filters.

City of Torrance Municipal Code

The City of Torrance is one of the co-permittees on the MS4 Permit (Order No. R4-2012-0175). Stormwater quality provisions of the municipal code are set forth in Division 4 Chapters 10, Stormwater and Urban Runoff Pollution Control, and 11, Low Impact Development Strategies for Development and Redevelopment. These municipal code requirements parallel some of the requirements of the LID Manual and thus are not discussed in detail here.

5.8.1.2 APPLICABLE PLANS AND PROGRAMS

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2012, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or to be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP estimates sediment risk from construction activities to receiving waters; must list BMPs implemented on the construction site to protect stormwater runoff; and must contain a visual monitoring program, a chemical monitoring program for "non-visible"

pollutants to be implemented if there is a failure of BMPs, and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas on FIRMs.

The Flood Disaster Protection Act requires owners of all structures in identified Special Flood Hazard Areas to purchase and maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally subsidized flood insurance to property owners in communities which adopt and enforce floodplain management ordinances that meet minimum FEMA criteria. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System, a system for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing erosion hazards.

The City of Torrance, under NFIP, has adopted Chapter 9, Flood Hazard Insurance, in Division 7 of its municipal code, which establishes regulations, standards and policies to ensure flood protection. These regulations address development and redevelopment, compatibility of uses, required predevelopment drainage studies, compliance with discharge permits, enhancement of existing waterways, cooperation with the US Army Corps of Engineers and the City of Torrance for updating, and method consistency with the Regional Water Quality Control Board and proposed BMPs.

5.8.1.3 EXISTING CONDITIONS

Regional Drainage

The project site is in the Dominguez Watershed, which spans about 133 square miles in southwest Los Angeles County, extending from the northern slopes of the Palos Verdes Hills north to the City of Inglewood (see Figure 5.8-1, *Dominguez Watershed*). The major stream in the watershed is the Dominguez Channel, an engineered channel extending about 16 miles from the City of Hawthorne in the north to Los Angeles Harbor in the south (LACDPW 2004). The main direction of drainage in the watershed is south and southeast to the Los Angeles Harbor. The regional drainage system is managed by the Los Angeles County Flood Control District (LACFCD), who also establishes design criteria for development that would discharge into its facilities.

Local Surface Waters and Drainage

Most of the proposed development area (Lot 1) of the project site is in a topographic depression remaining from past mining activity; the lowest elevation is approximately 190 feet above mean sea level (amsl). The lower pad is at elevation of approximately 190 to 220 feet and the upper pad is at approximately 235 feet to 245 feet. Runoff from slopes facing the proposed development area collect in the depression on the property, and drain towards the center of the site. During very intense storms the water level in the depression may rise enough to flow northward to Via Valmonte. The nearest storm drains to the site are in Hawthorne Boulevard just south of the intersection with Via Valmonte, and in Via Valmonte to the northwest of Hawthorne Boulevard. The storm drain in Hawthorne Boulevard is a 39-inch reinforced concrete pipe (RCP), and the storm drain in Via Valmonte is a 30-inch RCP. The nearest catch basins are also along Hawthorne Boulevard and Via Valmonte, south and northwest of the intersection of the roadways respectively, and along Via Valmonte north and northwest of the site (LACDPW 2017).

The storm drains in Hawthorne Boulevard and Via Valmonte are part of a network of storm drains extending north to the Walteria Sump about 0.9 mile north of the project site. Stormwater in the Walteria Sump evaporates, percolates into the ground, or is pumped to Machado Lake about 3.2 miles east of the project site. Machado Lake discharges into Bixby Slough, a reinforced concrete box storm drain, which discharges into Los Angeles Harbor (LACDPW 2017).The County Manual for the Standard Urban Storm Water Mitigation Plan limits stormwater runoff from developed property to 1.01 cubic feet per second per acre. This stormwater runoff quotient (Q) is used as a design parameter for all development projects. In addition, the County's stormwater system design storm is a 50-year, 4-day storm.

The 5.71-acre development portion of the project site and additional 6.37 on-site acres of upstream tributary drainage area result in a project site drainage area of 12.13 acres. Drainage conditions for the additional 12.55 acres of the project site, which together make up the entire 24.68 project site area, are not altered by the proposed project. Stormwater on the site generally drains north towards Via Valmonte. For stormwater runoff calculations, the Drainage Study divided the 12.13-acre drainage area affected by the proposed project into six smaller subareas (see Figure 5.8-2, *Existing Drainage Map*). Table 5.8-1, *Existing Runoff Rates, 50-Year Storm*, shows the estimated stormwater runoff from each of the six drainage areas assuming the LACFCD design storm. Currently, only subareas E1, E5 and E6 could result in stormwater runoff leaving the project site. Area E1 drains towards a catch basin on Via Valmonte. Areas E2, E3 and E4 sheet flow towards a low point on the site where the runoff is retained until evaporation and infiltration occur. Area E5 drains to the easterly towards Hawthorne Boulevard and then flows in the street towards catch basins at Hawthorne Boulevard and Via Valmonte, before travelling through the storm drain system. Area E6 and the southern portion of the site sheet flow toward a catch basin on Hawthorne Boulevard.

Table 5.8-1 Existing Runoff Rates, 50-Year Storm

Subarea[1]	Drains to:	Runoff from 50-year storm, cubic feet per second[2]
E1 (.54 AC)*	Catch basin on Via Valmonte	0.79
E2 (6.18 AC)*	Low point in project site	12.98
E3 (3.78 AC)	Low point in project site	5.52
E4 (0.58 AC)*	Low point in project site	1.22

Table 5.8-1 Existing Runoff Rates, 50-Year Storm

Subarea[1]	Drains to:	Runoff from 50-year storm, cubic feet per second[2]
E5 (1.05 AC)	Catch basins in Hawthorne Boulevard	1.95
E6 (0.12 AC)*	Catch basins in Hawthorne Boulevard	0.22

Source: KHR 2018.
Note: The site is currently 99 percent pervious.
*part of upstream drainage tributary area
1 Most of the project site is in subareas E3 and E5 (see Figure 5.8-2).
2 Existing runoff rate subtotals by destination are 18.5 cubic feet per second (cfs) to the project site; 0.79 cfs to Via Valmonte; and 3.39 cfs to Hawthorne Boulevard.

Surface Water Quality

Stormwater from the project site drains to the Walteria Sump where it evaporates, percolates into the ground, or is pumped to Machado Lake, and later discharged into Bixby Slough and into the Los Angeles Harbor. Machado Lake is listed as an impaired water body by the State Water Resources Control Board for algae, ammonia, ChemA, chlordane, DDT, dieldrin, eutrophic contamination, odor, polychlorinated biphenyls (PCBs), and trash.[1] Los Angeles-Long Beach Inner Harbor is listed for beach closures, benthic community effects (channel bottom water and soil), benzo(a)pyrene, chrysene, copper, DDT, PCBs, sediment toxicity, and zinc (SWRCB 2017).[2] TMDL status for each listed pollutant is shown in Table 5.8-2, *Pollutants in Receiving Water Bodies Listed on Section 303(d) List*.

Table 5.8-2 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Pollutant	Total Maximum Daily Load (TMDL) Status
Machado Lake	Algae	Approved 2009
	Ammonia	Approved 2009
	ChemA[1]	Estimated completion 2019
	Chlordane *organochlorine insecticide*	Estimated completion 2019
	DDT *organochlorine insecticide*	Estimated completion 2019
	Dieldrin *organochlorine insecticide*	Estimated completion 2019
	Eutrophic *Depletion of oxygen in water due to presence of excess nutrients*	Approved 2009
	Odor	Approved 2009
	PCBs	Estimated completion 2019
	Trash	Approved 2008
Los Angeles/ Long Beach Inner Harbor	Beach closures	Estimated completion 2004
	Benthic community effects	Estimated completion 2019
	Benzo(a)pyrene *polyaromatic hydrocarbon*	Estimated completion 2021
	Chrysene *aromatic hydrocarbon*	Estimated completion 2021
	Copper	Estimated completion 2019
	DDT	Estimated completion 2019

[1] Chlordane, DDT, and dieldrin are organochlorine insecticides. ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (HCH; including lindane), endosulfan, and toxaphene, all of which are organochlorine insecticides. Eutrophic water contains excess nutrients, inducing growth of plants and algae, which can deplete oxygen in water.
[2] Benzo(a)pyrene is a polyaromatic hydrocarbon; formed during incomplete combustion of organic matter; and is a potent mutagen and carcinogen. Chrysene, an aromatic hydrocarbon in coal tar, is toxic.

Table 5.8-2 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Pollutant	Total Maximum Daily Load (TMDL) Status
	Polychlorinated biphenyls (PCBs)	Estimated completion 2019
	Sediment Toxicity	Estimated completion 2009
	Zinc	Estimated completion 2008

Sources: SWRCB 2017; NCBI 2016.
[1] ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (HCH; including lindane), endosulfan, and toxaphene, all of which are organochlorine insecticides.

Groundwater

The project site is not above a groundwater basin. However, land northeast of the site across Hawthorne Boulevard is over the West Coast Subbasin of the Coastal Plain of Los Angeles Groundwater Basin that underlies much of the southwest Los Angeles Basin (DWR 2017) (see Figure 5.8-3, *West Coast Subbasin*). According to the geotechnical report, there is no reported data for the historically highest groundwater level in the immediate area. The closest groundwater monitoring well to the site is approximately 1.4 miles to the northeast, with reported levels between 82.7 feet below ground surface (bgs) in 2008 and 164.4 feet bgs in 1971. Groundwater was not encountered in investigative soil borings drilled to a maximum depth of 120.5 feet bgs within the proposed building area of Lot 1 or to 111.5 feet bgs at the top of Slope 3.

Groundwater Quality

Wellhead treatment is used at some wells in the West Coast Subbasin to remove volatile organic compound contaminants. Brackish groundwater—slightly salty due to seawater intrusion into the groundwater basin—is treated at two facilities. The Brewer Desalting Facility in Torrance has a capacity of 2.1 million gallons per day (mgd) and is operated by the West Basin Municipal Water District. The Goldsworthy Desalter, also in Torrance, is operated by the Water Replenishment District of Southern California; an expansion of that facility to 5 mgd capacity is scheduled for completion in 2019 (California Resource Agency 2019). There is no groundwater management plan in effect pertaining to the project site, as the site is not over a groundwater basin.

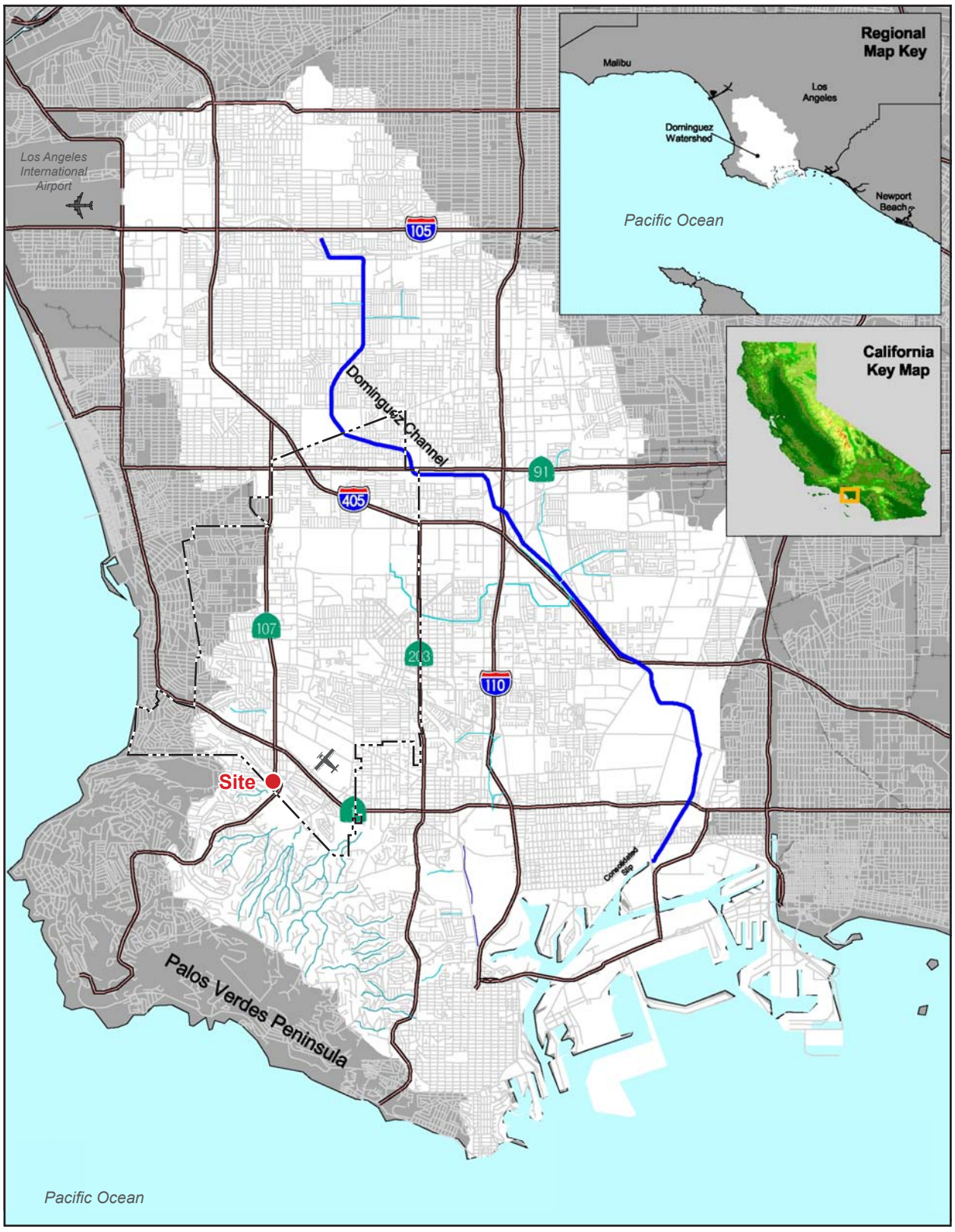
5.8.1.4 FLOOD HAZARDS

Designated Flood Zones

Approximately 1.2 acres of the project site near the northwest boundary—and partly in the proposed development area—are in a 100-year flood zone (flood zone A) mapped by FEMA (FEMA 2017) (see Figures 5.8.4, Site Plan Flood and 5.8-5, *Flood Zone Map*). Two pads have been graded on the site of the former mine pit—one at approximately 190 to 220 feet amsl, and one at approximately 235 to 245 feet amsl. The flood zone map does not reflect the existing pad grading. According to the applicant, a Letter of Map Revision (LOMR) will be submitted to FEMA to remove the area from Zone A. If approved, the entire site will be within Zone X, which is outside of 100-year and 500-year flood zones. With approval of the proposed project, the project applicant will seek approval of the LOMR. As approval of the LOMR is outside of the City's jurisdiction, this EIR does not assume that the LOMR will be approved.

Figure 5.8-1 - Dominguez Watershed

5. Environmental Analysis



Torrance City Boundary

0 3
Scale (Miles)

Source: Los Angeles County Department of Public Works, 2004

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Figure 5.8-2 - Existing Drainage Map
5. Environmental Analysis

Source: KHR Associates, 2018

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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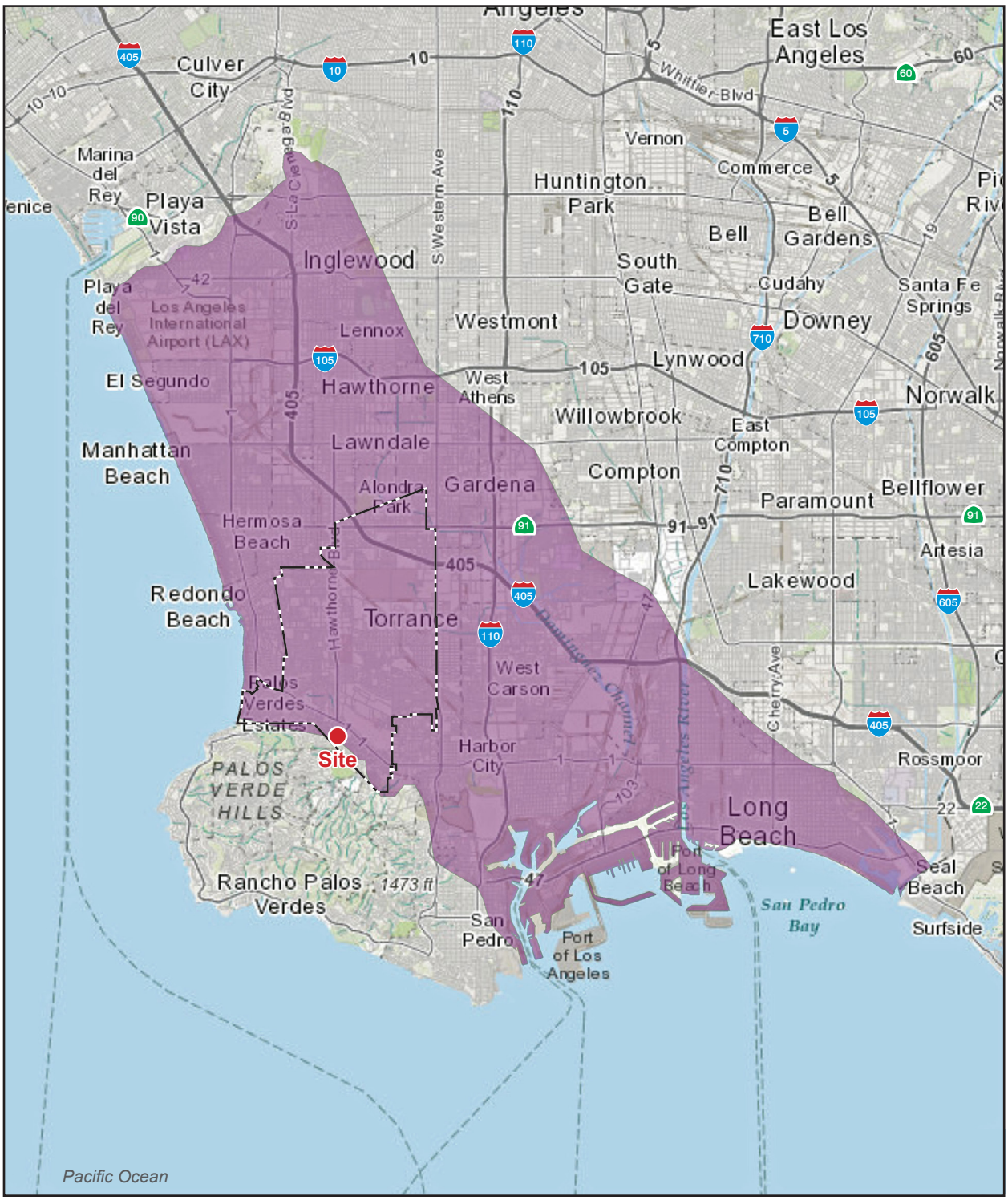
Figure 5.8-3 - West Coast Subbasin
5. Environmental Analysis



Source: Department of Water Resources, 2016

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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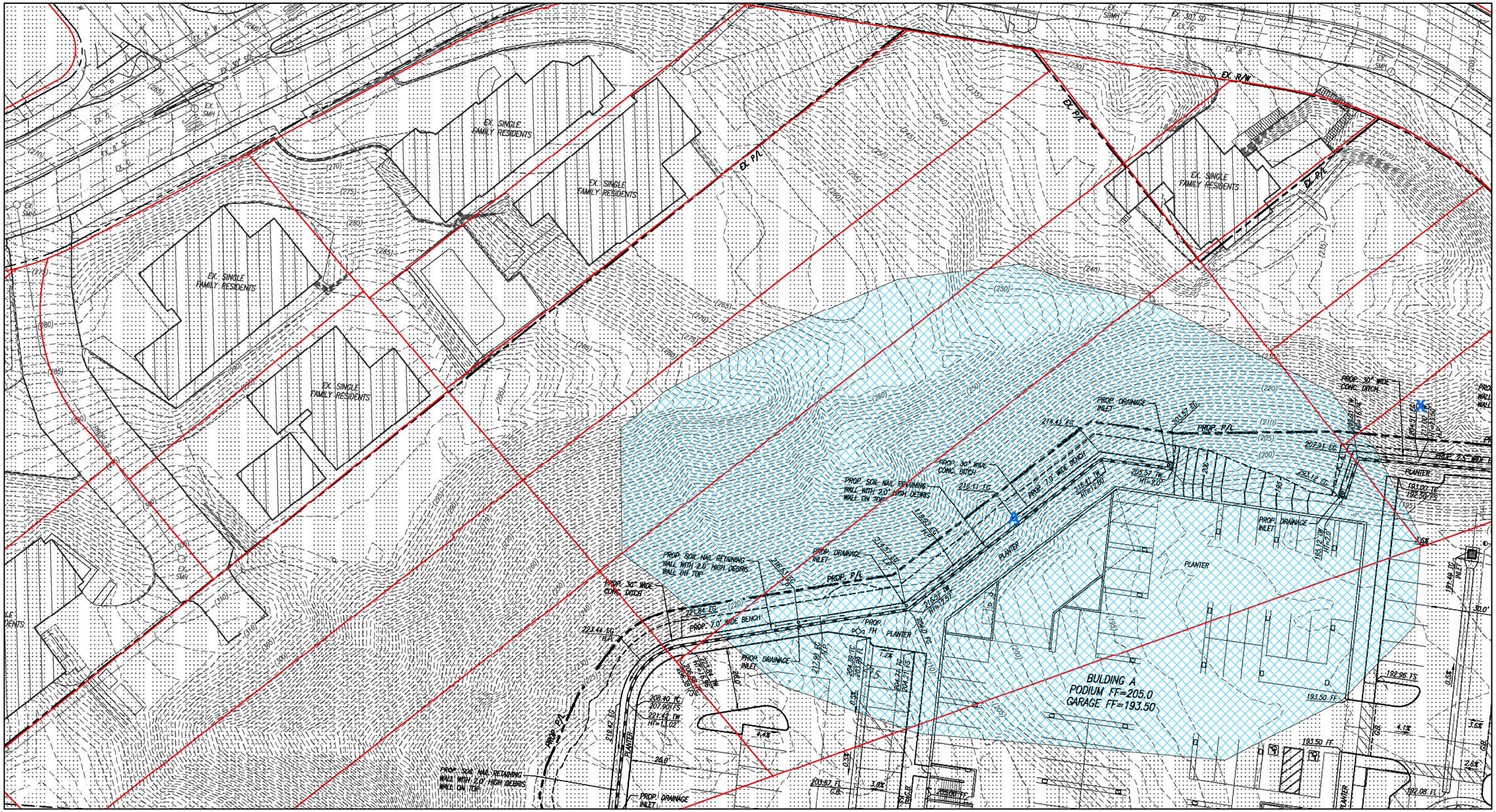
Figure 5.8-4 - Site Plan Flood



Source: FEMA, 2018

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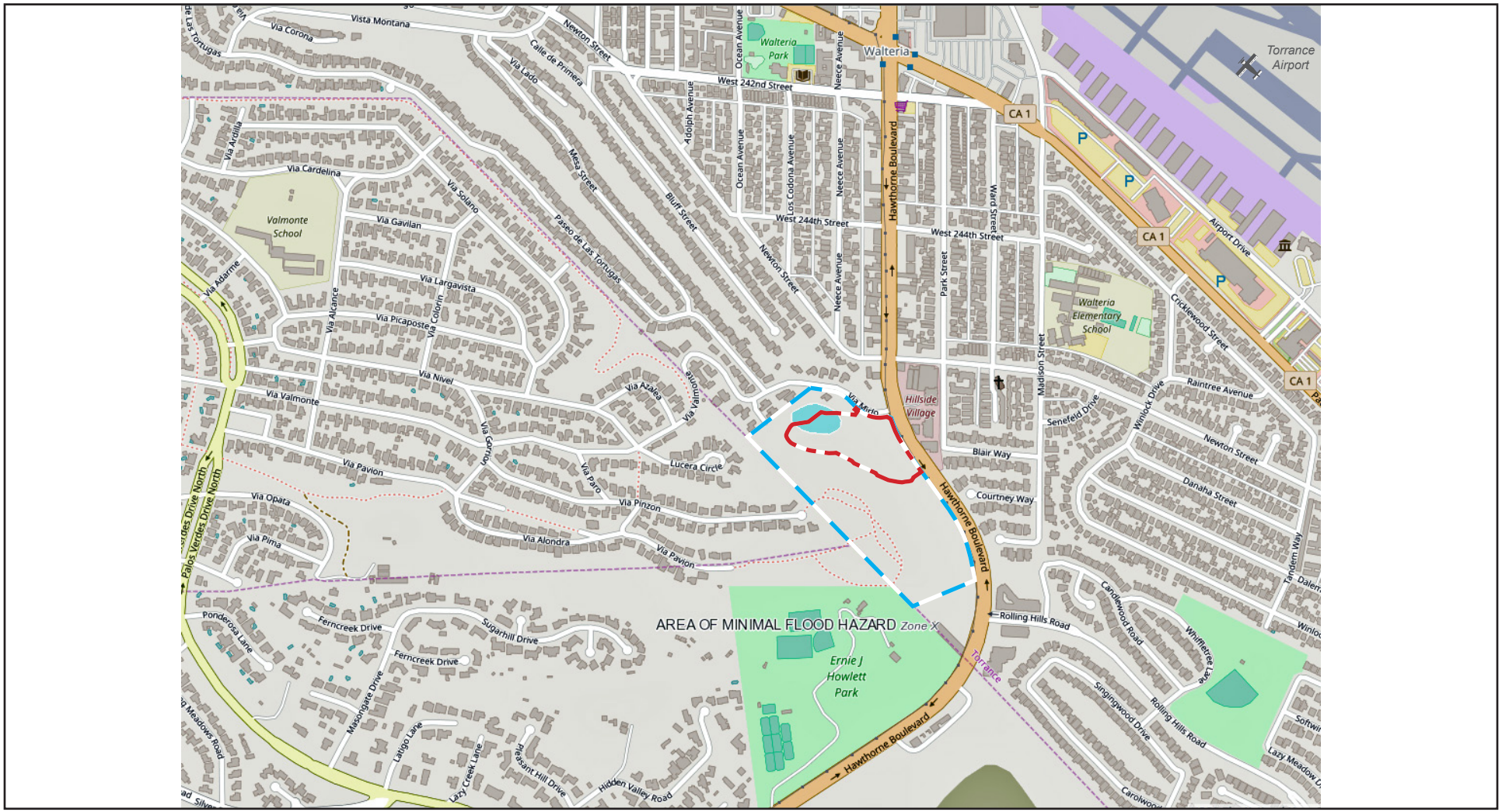
Figure 5.8-5 - Flood Zone Map
5. Environmental Analysis



Source: Federal Emergency Management Agency, 2017

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5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[3]

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

HYD-2 Substantially deplete decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would**:**

(i) result in substantial erosion or siltation on- or off-site**;**

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

(iv) impede or redirect flood flows?

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Initial Study, included as Appendix A, substantiates that impacts associated with threshold HYD-2 would be less than significant. This impact will not be addressed in the following analysis.[4]

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.
[4] Impacts related to Threshold HYD-9 analyzed in the Initial Study were also identified as less than significant. Threshold 9 was deleted from CEQA Guidelines Appendix G in the CEQA Guidelines Update approved in December 2018. Flood hazards are now analyzed in thresholds HYD-3.iii and HYD-4.

Impact 5.8-1: During the construction phase of the proposed project, there is the potential for short-term unquantifiable increases in pollutant concentrations from the site. After project development, the quality of storm runoff (sediment, nutrients, metals, pesticides, pathogens, and hydrocarbons) may be altered. [Thresholds HYD-1, HYD-3.i and HYD-5]

Construction

Contaminants that can be released by construction projects and can contaminate stormwater include sediment, nutrients, bacteria and viruses, oil and grease, metals, organic (carbon-based) compounds, oxygen-demanding substances, pesticides, and trash and debris. Organic compounds are found in pesticides, solvents, and hydrocarbons. Oxygen-demanding substances include proteins, carbohydrates, and fats; microbial degradation of such substances increases oxygen demand in water (CASQA 2012).

In accordance with the updated General Construction Permit (Order No. 2012-0006-DWQ), the following permit registration documents must be submitted to the SWRCB prior to commencement of construction activities:

- Notice of Intent
- Risk Assessment (standard or site specific)
- Particle Size Analysis (if site-specific risk assessment is performed)
- Site Map
- Stormwater Pollution Prevention Plan
- Active Treatment System Design Documentation (if determined necessary)
- Annual Fee and Certification

Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the permit registration documents with the SWRCB, including preparation of a SWPPP describing the BMPs to be implemented during project construction. The SWPPP's construction BMPs shall address pollutant source reduction and provide measures/controls necessary to minimize potential pollutants. These include, but are not limited to: erosion controls, sediment controls, tracking controls, nonstorm water management, materials and waste management, and good housekeeping practices.

- **Erosion controls** cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind; examples include mulch, geotextiles, mats, hydroseeding, earth dikes, and swales.

- **Sediment controls** filter out soil particles that have been detached and transported in water; examples include barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basins; and cleaning measures such as street sweeping.

- **Tracking controls** minimize the tracking of soil offsite by vehicles; examples include stabilized construction roadways and construction entrances/exits, and entrance/outlet tire washes.

- **Non-storm Water Management Controls** prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Examples include BMPs for specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; and concrete curing and finishing.

- **Waste Management and Controls** include spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes. (CASQA 2012)

The SWPPP must be implemented at the project site and revised as necessary as administrative or physical conditions change. With the implementation of the SWPPP, construction water quality impacts would be less than significant.

Operation

Project operation could generate the same categories of pollutants that project construction could. For example, runoff from buildings and parking lots typically contain oils, grease, fuel, antifreeze, by-products of combustion (such as lead, cadmium, nickel, and other metals), fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

LID Manual

The proposed project is a Designated Project as defined in the LID Manual. The LID Manual sets forth several categories of Designated Projects, one of which is development projects equal to one acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area.

Requirements for Designated Projects

- Conduct site assessment and identify design considerations, including determining the feasibility of on-site infiltration.
- Apply site-specific source control measures.
- Calculate the Stormwater Quality Design Volume.
- Implement stormwater quality control measures.
- Implement alternative compliance measures, if necessary.
- Implement hydromodification requirements, if necessary.
- Develop a Maintenance Plan, if necessary.

Best Management Practices

Site Assessment

The design of the proposed project drainage system and water quality components is based on an assessment of site layout, geotechnical conditions, local groundwater conditions, and existing drainage.

Site Design

Site design BMPs reduce or eliminate post-project runoff. Site design BMPs include protecting and restoring natural areas; minimizing land disturbance, and minimizing impervious area.

Protect and Restore Natural Areas: The proposed project would protect 17.62 acres as passive natural open space. Another 0.99 acre of the site (brush management zone) would be left vacant; however, vegetation on that area would be altered and managed to minimize wildfire hazard.

Minimize Land Disturbance: See the preceding discussion of proposed open space.

Minimize Impervious Area: The project design includes about 2.21 acres of landscaping with the development area; the 0.99-acre brush management zone that would be maintained as vacant land with vegetation managed to minimize wildfire hazard; and the 17.62-acre open space reserve. Overall, about 82 percent of the proposed site would be pervious surfaces at project completion.

Source Control BMPs

Source control BMPs reduce the potential for pollutants to enter runoff. Source control BMPs are classified in two categories:

Structural source control measures: examples include roof runoff controls, protection of slopes and channels, efficient irrigation, and storm drain system signage.

Nonstructural source control measures: reduce the potential for pollutants resulting from activities onsite to enter runoff. Examples include education of owners and employees; activity restrictions, such as requiring that trash can lids be closed at all times and prohibiting outdoor cooking and car washing; and periodic inspections of water quality features such as catch basins and filters.

Treatment Control BMPs

Treatment control BMPs remove pollutants from contaminated stormwater before the water is discharged offsite. Examples include biofiltration through constructed project landscape elements such as bioswales, infiltration trenches, and/or infiltration basins; and filters.

Grates on storm drain inlets would prevent large debris from entering storm drains. The proposed drainage system would include proprietary separator units, which separate floatables, debris 2.4 millimeters (0.094 inches) or larger, sediment, and hydrocarbons. Three separator units are proposed: one near the central part of the southern development area boundary; one in a drive aisle just west of the intersection of the aisle with Via Valmonte; and one in the east part of the site (see Figure 3-14, *Proposed Drainage Plan*).

Operational water quality impacts would be less than significant after implementation of the above-described BMPs.

Water Quality Control Plan

The LID Manual sets forth guidance for meeting certain requirements of the above-described MS4 Permit; which, in turn, implements the Water Quality Control Plan for the Los Angeles Regional Water Quality Control Board Region. Project design and operation would comply with requirements set forth in the LID Manual, as described above. Thus, project development would not conflict with or obstruct implementation of the Water Quality Control Plan. Impacts would be less than significant.

Impact 5.8-2: Development pursuant to the proposed project would increase the amount of impervious surfaces on the site and would therefore increase surface water flows into drainage systems within the watershed. [Thresholds HYD-3.ii and HYD-3.iii]

Impervious Surfaces

The project proposes development buildings with total footprints of about 109,400 square feet or 2.51 acres; approximately 64,383 square feet (1.48 acres) of driveways and surface parking; and about 15,040 square feet (0.35 acres) of private decks, for a total of about 188,823 square feet (4.33 acres) of impervious area, that is, approximately 76 percent of the proposed development area of Lot 1, or 18 percent of the entire 24.68-acre project site.

Post-project Runoff

The increase in impervious surface, and removal of flood zone A–low area, would result in additional stormwater runoff. Based on the amount of impervious surface, the Drainage Study estimates that peak stormwater runoff from the proposed project would be 31.84 cubic feet per second. The County limits the amount of runoff that can leave the project site when connected to the public system to 1.01 cubic feet per second per acre from the altered project area of 12.13 acres (development area and upstream tributary), for a total of 12.25 cubic feet per second. Therefore, the proposed runoff from the site would be restricted onsite to satisfy the allowable discharge flow rate.

Proposed Drainage System

Collection System

In post-project conditions runoff from the project site would be collected by roof drains, area drains, and catch basins discharging to proposed storm drains. The paved parking and drive areas would be contoured to direct stormwater to catch basins. The proposed network of storm drains would span the entire altered project area and would discharge to an existing storm drain in Via Valmonte immediately west of its intersection with Hawthorne Boulevard (see Figure 3-14, *Proposed Drainage Plan*). Three underground infiltration tanks and associated aggregate filled trenches will be used for infiltration of the LID design storm and three underground infiltration tanks along with their associated aggregate filled trenches will be used to hold the difference in volume over the allowable discharge flow (Tanks A, B and C). Outlet pipes from the site drainage system are sized to only allow appropriate flows to the storm drain system for each sub area to comply with County stormwater discharge requirements.

Stormwater Quality and Storage

The proposed drainage system would include proprietary separator units that separate floatables, debris 2.4 millimeters (0.094 inches) or larger, sediment, and hydrocarbons (Contech 2017). Three separator units are proposed: one near the central part of the southern development area boundary; one in a drive aisle just west of the intersection of the aisle with Via Valmonte; and one in the east part of the site.

After passing through the separator units, runoff from the first flush—that is, 0.85 inches of rainfall in 24 hours—would be directed into three perforated corrugated metal pipe tanks (tank 1 in subarea 1, tank 2 in subarea 2, and tank 3 in subarea 3) designed to meet LID requirements. The three LID tanks would be set in aggregate-filled trenches to allow for infiltration and would have combined capacity of 17,733 cubic feet or about 132,652 gallons. The locations of the three LID tanks are shown on Figure 3-14, *Proposed Drainage Plan.*

Runoff exceeding the allowable discharge rate (12.25 cfs) and below the runoff rate from the design storm would be diverted into a second set of perforated corrugated metal pipe tanks and aggregate filled trenches (Tanks A, B and C). The locations of the three tanks are shown on Figure 3-14, *Proposed Drainage Plan*. The three excess flow tanks combined would have capacity of about 5,853 cubic feet or 43,783 gallons.

The proposed drainage system, including the six infiltration tanks and trenches, would limit the post-development, peak-stormwater-runoff discharge rates from the design storm to the maximum of 12.25 cubic feet per second.

Proposed Off-Site Storm Drain Improvements

The project includes two proposed off-site drainage improvements:

1. An expanded catch basin in the south gutter of Via Valmonte immediately west of its intersection with Hawthorne Boulevard.
2. Replacement of an existing 18-inch RCP storm drain from the aforementioned catch basin approximately 16 feet north to an existing 30-inch storm drain in Via Valmonte with a 24-inch RCP pipe (see Figure 3-14, *Proposed Drainage Plan*).

Both proposed off-site drainage improvements would be built within a developed roadway. Construction impacts would be addressed by the standard City requirements for dust and erosion control, noise, and other requirements as may be placed on the encroachment permit allowing construction in Via Valmonte.

Flood Hazard

As the proposed on- and off-site drainage improvements would limit post-project runoff discharge from the site to the existing 12.25 cubic feet per second and would retain the balance of the peak stormwater runoff on the project site through the use of underground infiltration tanks and aggregate trenches, the proposed project has the capacity to capture and safely discharge stormwater from a 50-year, four day storm. The proposed project would not cause substantial flood hazards on- or off-site. Additionally, Due to the fact that the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps are not updated regularly, the area which was filled in is shown as a special flood hazard area - Zone A, which is subject to inundation by the 1% annual

chance of flood. An application for a Letter of Map Revision (LOMR) is being submitted to FEMA to remove the area from Zone A so the entire site is within Zone X, which is outside the 0.2% annual chance floodplain.

Erosion and Siltation

Construction

Project construction would include implementation of temporary BMPs for minimizing erosion and sedimentation described in Impact 5.8-3 below. Erosion and siltation impacts from project construction would be less than significant after implementation of BMPs.

Operation

Project design and project operation would include implementation of BMPs for minimizing water pollutants, including sediment, as required under the Los Angeles County LID Manual. Such BMPs are described in Impact 5.8-3, below. Erosion and siltation impacts from project operation would be less than significant after implementation of BMPs.

Conclusion

Peak runoff rates from the development area would meet the discharge limits established by LACFCD. Therefore, project development would not have a substantial adverse impact on the capacities of off-site drainage systems, and impacts would be less than significant.

Impact 5.8-3: Project development would not impede or redirect flood flows and would not risk release of pollutants due to project inundation. [Thresholds HYD-3.iv and HYD-4]

100-Year Flood Zone

Approximately 1.2 acres on-site near the northwest boundary—and partly in the proposed development area—are in a 100-year flood zone; half of the area mapped as Flood Zone A is on Slope 1 identified by the Geotechnical Investigation Report (Geocon West 2017). Elevations in the 100-year flood zone on-site range from about 189 feet amsl to approximately 284 feet amsl. Two pads have been graded on the site of the former mine pit—one at approximately 190 to 220 feet amsl and one at approximately 235 to 245 feet amsl. The flood zone map does not reflect the pad grading onsite. An application for a Letter of Map Revision is being submitted to FEMA to remove the area from Zone A so the entire site would be within Zone X. If the LOMR is approved, the entire site would be outside of 100-year and 500-year flood zones. If the LOMR is not approved the project would be subject to the requirements of Chapter 9, Flood Hazard Insurance, of the Torrance Municipal Code.

Flood Risks due to Project Development

With Approved LOMR

If the LOMR is approved, the proposed project would not be within the 100-year flood zone and therefore would not impede or redirect flood flows. Application of LID BMPs required by City and state regulations

eliminate the potential to release pollutants due to inundation of the project by a 100-year flood. With approval of the proposed project, the applicant will seek approval of the LOMR. See Impact 5.8-1 for a discussion of proposed drainage improvements.

Without Approved LOMR

Division 7, Chapter 9, Article 5 of the Torrance Municipal Code establishes provisions for construction that would impact flood zones. Section 79.5.1 of Article 5 requires design elements such as clear path of flow, anchoring of buildings, finished floor elevations, and design elements that would automatically balance hydrostatic pressure during storm events. These provisions are required of all new construction and would be applied to the proposed project if the LOMR is not approved. As these regulations automatically apply; there is no need to establish separate mitigation imposing the requirements.

Stormwater improvements included in the proposed project are designed to LACFCD standards that limit the amount of stormwater runoff to 1.01 cubic feet per second per acre from the altered portions of the project. The project includes adequate underground infiltration storage to ensure that stormwater runoff does not exceed this limitation, as substantiated in Impact 5.8-1, above. Off-site improvements are proposed that would ensure adequate connection to the regional storm drain system. Water quality of first-flush stormwater is addressed through on-site filtration and adherence to BMPs. Impacts to water quality and discharge amounts are considered less than significant.

5.8.4 Cumulative Impacts

Surface Water, Drainage, and Flooding

The area considered for cumulative impacts to surface water, drainage, and flooding is the Dominguez Watershed. Other projects would increase impervious areas in the watershed, thus potentially increasing runoff. Other Designated Projects would be required to limit peak post-development runoff rates from the design storm to no greater than predevelopment rates from the same intensity storm.

Water Quality

The area considered for cumulative water quality impacts is the coverage area of MS4 Permit No. R4-2012-0175, encompassing nearly all of Los Angeles County except for the Antelope Valley and the part of the San Gabriel Mountains draining northward to the Mojave Desert.

As a gauge of the amount of future development forecast for Los Angeles County, the population is forecast to increase from about 10,159,000 in 2015 to 11,514,000 in 2040 (an increase of 1,355,000 or about 13 percent), and employment is forecast to increase from about 4,463,000 in 2015 to 5,226,000 in 2040, an increase of 763,000 or 17 percent (SCAG 2016).

Other construction projects one acre and larger would be required to prepare and implement SWPPPs, including construction BMPs described above. The design and operation of other projects would be mandated to conform with requirements of each affected permittee on the MS4 Permit—for example, municipal code provisions for cities and the LID Manual issued by the Los Angeles County Department of Public Works for

unincorporated areas of the county. Cumulative impacts would be less than significant after compliance with the foregoing requirements, and project impacts would not be cumulatively considerable.

5.8.5 Existing Regulations and Standard Conditions

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- United States Code Title 42, Sections 300f et seq.: Safe Drinking Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System (NPDES)

State

- California Water Code Sections 13000 et seq.: Porter-Cologne Water Quality Act
- Order No. 2012-0006-DWQ, Statewide General Construction Permit, State Water Resources Control Board

Los Angeles Regional Water Quality Control Board

- Order No. R4-2012-0175: Municipal Stormwater (MS4) Permit

Los Angeles County Department of Public Works

- Los Angeles County Low Impact Development Standards Manual

City of Torrance

- Municipal Code Division 4

  Chapter 10: Stormwater and Urban Runoff Pollution Control

  Chapter 11: Low Impact Development Strategies for Development and Redevelopment

- Municipal Code Division 7

  Chapter 9: Flood Hazard Insurance

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.8-1, 5.8-2, and 5.8-3.

5.8.7 Mitigation Measures

No mitigation measures are required.

5.8.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.8.9 References

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5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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5.9 LAND USE AND PLANNING

This section of the DEIR evaluates potential impacts to land use in the city of Torrance from implementation of the proposed project. While CEQA analysis may identify areas of inconsistency between the project and General Plan (CEQA Guidelines § 15125(d)), the inconsistency itself does not necessarily equate with a physical impact on the environment, which is the primary concern of CEQA analysis. The CEQA statute and guidelines do not require perfect conformity between a proposed project and the applicable General Plan. Physical impacts associated with the proposed project are evaluated in the Chapters 5.1 through 5.8 and 5.10 through 5.14 of this DEIR.

Fifty-seven comments relating to land use and planning were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily related to the proposed General Plan and zoning amendments, as well as the potential for the proposed project to conflict with the Hillside Overlay District. The potential impacts relating to land use and planning from implementation of the proposed project have been analyzed in this section.

5.9.1 Environmental Setting

5.9.1.1 REGULATORY FRAMEWORK

This section summarizes key regional and City regulations and policies pertaining to land use and planning that are applicable to the proposed project. Other than CEQA, there are no federal or State regulations applicable to the proposed project with regards to land use and planning. Coastal California gnatcatcher is federally listed as threatened (FT) and is a Species of Special Concern. Coastal California gnatcatchers generally prefer open sage scrub habitats with California coastal sagebrush as a dominant or co-dominant species. .Nest placement is typically in areas of less than 40 percent slope gradient. No California gnatcatcher pairs or individuals were observed within the study area during focused surveys conducted for coastal California gnatcatcher between April 2015 and June 2016. Additionally, the terrain in the study area is steeper than typically preferred by this species, and there is poor connection to existing known populations. While the project site is in federally designated critical habitat (Unit 8: Palos Verde Peninsula Subregion), it is unlikely that coastal California gnatcatchers would inhabit coastal sage scrub habitats mapped within the property boundary, including the proposed project development footprint, due to the steep terrain, proximity of the habitat to roads and disturbance, and the minimal and fragmented amount of suitable habitat present within the study area.

Regional Regulations

This section describes regional land use plans and regulations applicable to the proposed project.

The 2016 – 2040 Regional Transportation Plan/ Sustainable Communities Strategy

The Southern California Association of Governments' (SCAG) current Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) was adopted in April 2016 with two subsequent amendments on April 6, 2017 and July 6, 2017. The RTP/SCS sets a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas

(GHG) emissions from cars and trucks beyond the per capita reduction targets identified by the California Air Resources Board (CARB). The overreaching strategy described in the RTP/SCS calls for a more compact development pattern, centered around transportation hubs. While the RTP/SCS identifies High Quality Transit Areas which are projected to accommodate 46 percent of future residential growth through 2040, it is noted in the RTP/SCS that SCAG supports local control for local land use decisions.

South Bay Cities Council of Governments Strategic Plan

The South Bay Cities Council of Governments (SBCCOG) is a joint power authority (JPA) comprised of sixteen cities and portions of unincorporated Los Angeles County in the South Bay region of Los Angeles County. The SBCCOG Strategic Plan was adopted on March 27, 2014 and contains goals and strategies aimed at achieving the mission of the organization, which is to "provide a leadership forum for South Bay local governments to act collaboratively and advocate for regional issues with a focus on improving transportation and the environment, and strengthening economic development."[1] Through SBCCOG's strategic planning process the following four goals were identified:

- Goal A: Environment, Transportation and Economic Development. Facilitate, implement and/or educate members and others about environmental, transportation and economic development programs that benefit the South Bay.
- Goal B: Regional Advocacy. Advocate for the interests of the South Bay.
- Goal C: Member Networking and Communications. Sustain and strengthen Board and member commitment to SBCCOG and its initiatives.
- Goal D: Organizational Stability. Be a high performing organization with a clear path to long-term financial health, staffing continuity and sustained board commitment.

Local Regulations

This section describes the City of Torrance's local land use regulations applicable to the proposed project.

City of Torrance General Plan

The City's most recent General Plan update was adopted by the City of Torrance City Council on April 6, 2010. The General Plan was prepared and adopted to codify goals and policies which will guide the City's continued change. It contains chapters relating to land use, circulation, community resources, safety, noise, and housing.

The seven State-mandated General Plan elements (Land Use, Circulation, Conservation, Housing, Open Space, Noise, and Safety) are contained in the City's General Plan as follows:

- 1. Land Use Element
- 2. Circulation and Infrastructure Element
- 3. Community Resources Element
- 4. Safety Element

[1] South Bay Cities Council of Governments, March 2014, South Bay Cities Council of Governments Strategic Plan, page 2

- 5. Noise Element
- 6. Housing Element

General Plan Land Uses

The City's General Plan currently designates the project site as Low-Density Residential (R-LO). This designation allows for a residential density of up to nine dwelling units per acre (du/ac). The General Plan envisions that development on properties with this designation be characterized generally by detached single-family dwellings on individual lots forming a cohesive neighborhood. As described in Chapter 3 of this DEIR, approval of the proposed General Plan Amendment (GPA16-00001) component of the proposed project would redesignate the project site as Low-Medium Density Residential (R-LM). The R-LM General Plan land use designation allows for residential development with a residential density of 9.1 to 18 du/ac. This density range is intended to accommodate small-lot single-family homes, duplexes, attached multi-family developments, and mobile home parks. The proposed project results in a blended 10.0 du/ac ratio when accounting for the entire 24.68 acres comprising the site. If viewed as an independent parcel, Lot 1's proposed 43.4 du/ac would require a Medium-High Residential (R-MH) designation which allows a density range of 31.1-44 du/ac. In this scenario, the remainder of the site would be designated as Public/Quasi-Public/ Open Space (PUB).

City of Torrance Municipal Code

The existing zoning onsite is A-1 (Light Agricultural District) (Hillside Overlay District). The A-1 District permits single-family residences on lots of at least 6,000 square feet each; certain agricultural uses such as flower and vegetable gardens, orchards, tree crops, and berry or bush crops; day care uses in residences; and schools. The project applicant is seeking a zone change (ZON16-00001) from A-1 (Light Agricultural) (Hillside Overlay District) to PD (Planned Development) (Hillside Overlay District) (PUD16-00001). All property within a PD District shall be used only for those purposes permitted by the General Plan of the City and any Development Plan approved by the City (Torrance Municipal Code Section 91.42.1). The Hillside Overlay District sets forth the following requirements for planning and design of construction, remodeling, and enlargement projects in the Overlay District:

- The proposed development will not have an adverse impact upon the view, light, air and privacy of other properties in the vicinity.
- The development has been located, planned and designed so as to cause the least intrusion on the views, light, air and privacy of other properties in the vicinity.
- The design provides an orderly and attractive development in harmony with other properties in the vicinity.
- The design will not have a harmful impact upon the land values and investment of other properties in the vicinity.
- Granting such application would not be materially detrimental to the public welfare and to other properties in the vicinity.

- The proposed development will not cause or result in an adverse cumulative impact on other properties in the vicinity.

5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

LU-1 Physically divide an established community.

LU-2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The Initial Study for the proposed project, included as Appendix A of this DEIR, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold LU-1
- Threshold LU-3[3]

These thresholds will not be addressed in the following analysis. Although the property boundary is within USFWS-designated critical habitat for the coastal California gnatcatcher, this species has a low chance of occurring within the study area based on the negative results of focused coastal California gnatcatcher surveys conducted in the study area in 2016, the small extent of coastal scrub and chaparral habitats within the study area, the steep slopes in which most of this habitat occurs, and the isolation of the site. The closest documented occurrence for coastal California gnatcatcher is approximately two miles south of the property boundary, and the study area is surrounded by development to the north, east, and south, with no suitable gnatcatcher habitat to the west. Thus, there is a low potential for coastal California gnatcatcher to occur within the study area, no further analysis is required, and impacts to this species are not anticipated.

5.9.3 Environmental Impacts

The following impact analysis addresses the threshold of significance for which the Initial Study disclosed as having a potentially significant impact. The applicable threshold is identified in brackets after the impact statement.

Potential physical impacts associated with the proposed General Plan Amendment to change the General Plan land use designation from Low-Density Residential (R-LO) to Low-Medium-Density Residential (R-LM) and the Zone Change from A-1 (Light Agricultural) (Hillside Overlay District) to PD (Planned Development) (Hillside Overlay District) are evaluated below. However, since these actions are prerequisites for the other

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.
[3] Threshold 3 was deleted from CEQA Guidelines Appendix G in the CEQA Guidelines Update approved in December 2018.

discretionary permits included as part of the proposed project, in evaluating the proposed Conditional Use Permit and Precise Plan of Development, the provisions of the resultant General Plan land use designation and zone would apply, as described further below.

Impact 5.10-1: Project Implementation would not conflict with several Planning and Design Guidelines of the City of Torrance Hillside and Coastal Overlay Zone. Project development would be consistent with relevant policies of the City's General Plan. [Threshold LU-2]

Impact Analysis: Upon completion of clearing and site grading of the 5.71 acres of the former diatomaceous earth mine, the project site would be developed with 248 apartment units in three 5-story buildings, each consisting of four residential floors above a ground-level parking garage, and the development of an 89,545-square foot, 242-space, 6-story parking structure that would include a roof deck with a pool and spa area. Additionally, the proposed project would include a 4,980-square-foot community room/gym and approximately 96,385 square feet of landscaped open space. The three residential buildings with garages total 371,309 square feet. The footprints of the four buildings would total 109,400 square feet or approximately 2.5 acres. Units by size per building are listed in Table 3-1, *Proposed Apartment Units by Size and Building*. The configuration of the proposed buildings and land uses within the site is shown in Figure 3-6, *Site Plan*.

The proposed project would require a General Plan Amendment (GPA16-00001) to change the land use designation from Low-Density Residential (R-LO) to Low-Medium-Density Residential (R-LM). Additionally, the project applicant would seek a zone change (ZON16-00001) from A-1 (Light Agricultural) (Hillside Overlay District) to PD (Planned Development) (Hillside Overlay District) (PUD16-00001), and a conditional use permit (CUP16-00004), precise plan of development and planned development, and vesting tentative tract map.

Below is an evaluation of the proposed project's consistency with applicable City plans and programs that have been adopted for the purpose of avoiding or mitigating an environmental effect.

General Plan Consistency

A detailed analysis of the proposed project's consistency with the applicable goals and policies of the City of Torrance General Plan is provided below in Table 5.9-1, *Torrance General Plan Consistency Analysis*. Although the City's General Plan contains numerous additional goals and policies beyond those discussed in the following table, those goals and policies are not closely related to the "purpose of avoiding or mitigating an environmental effect" and are therefore not analyzed in the table.

Table 5.9-1 Torrance General Plan Consistency Analysis

Applicable Goals and Policies	Project Consistency
LAND USE ELEMENT	
Objective LU.1: **Consistency between the General Plan and Zoning Ordinance**	
LU.1.1: Resolve inconsistencies between the General Plan and the Torrance Municipal Code and require that new land use development be consistent with the General Plan.	**Consistent.** The proposed Planned Development (Hillside Overlay District) (PUD16-00001) Zoning District would be consistent with the proposed Low-Medium-Density Residential (R-LM) General Plan Designation if the dwelling units are assessed on a site as a whole. If viewed independently, the appropriate General Plan

	designation would be Medium –High Residential (R-MH) for the proposed development parcel. The Low-Medium Density Residential designation provides for the development of small-lot single-family homes, duplexes, attached multi-unit developments, and mobile home parks within a density range of 9.1 to 18 dwelling units per acre. Utilizing the entire 24.68-acre site, the proposed project would be consistent with the Low-Medium Residential Designation.
Objective LU.2: A compatible land use pattern	
LU.2.1: Require that new development be visually and functionally compatible with existing residential neighborhoods and industrial and commercial areas.	**Consistent**. The new development would be substantially taller and denser than existing commercial and residential development on Hawthorne Boulevard. In order to lessen the visual impact of the massing in the project vicinity, the development would conform to the slope of the street along Hawthorne Boulevard. Upon completion of the proposed project, the dominant feature of the project site would remain the remnant slope face from both Hawthorn Boulevard and Via Valmonte. The proposed project would provide for an orderly and cohesive residential development project on vacant undeveloped land that previously was mined for diatomaceous earth. The new development would be surrounded by landscaping which would serve to enhance the existing visual character and reduce the apparent visual mass of the new residential development from surrounding areas along Hawthorne Boulevard. The architectural style of the project, both interior and exterior, would be a contemporary design. Maximum building elevations would be 65 feet for the residential units and 82 feet for the parking garage located adjacent the bluff face. The Lot 1 development area would be improved through the addition of open spaces and increased landscaping, including landscaped courtyards and sidewalks. Approximately 96,385 feet of landscaping is proposed within the development area, primarily along the entrance residential buildings, surface parking area, courtyard, and along the perimeter of Lot 1. In order to lessen the visual impact of the massing in the project vicinity, the development would conform to the slope of the street along Hawthorne Boulevard. The dominant feature of the project site would remain the remnant slope face from both Hawthorne Boulevard and Via Valmonte. Building frontage along both Hawthorne and Via Valmonte would be articulated and varied with landscaping and new street trees to provide a pleasing pedestrian environment. Additionally, the frontage of Building B along Hawthorne Boulevard would be set back from the street by a minimum of 20 feet, and up to 28.5 feet at its widest point.
LU.2.7: Protect natural resources by promoting superior sustainable development	**Consistent**. The area to be developed would be within the footprint of the former mine, equaling 5.71 acres in area, while the project would preserve the balance of the site (Lots 2 and 3), 18.92 acres, as natural open space that will remain its current state. As noted above, Lot 2 is 6.0 acres and would be comprised almost entirely of slopes and bluff face. The remaining 12.92 acres of Lot 3 would be maintained as natural open space in its current state. This equates to approximately 75 percent of the property being available as open space.

Objective LU.3: Planning decisions that recognize the unique characteristics, opportunities, and constraints of the City's diverse neighborhoods and districts while respecting private property rights	
LU.3.3: Encourage revitalization of underutilized properties along major corridors such as Crenshaw Boulevard, Western Avenue, and Redondo Beach Boulevard. Ensure that new development along these corridors is of high quality and attractively designed, given their location along the City's prime corridors.	**Consistent:** The project would develop a vacant property along Hawthorne Boulevard, a major corridor, with a high quality, attractively designed development. The proposed project would create a cohesive development on a currently unused, barren site along a major transportation corridor. The new development buildings would be clustered such that the entirety of Lot 3 would be retained in its current as open space. The project would add a modern and cohesive urban design to the Hawthorne Boulevard corridor.
Objective LU.5: High-quality, attractive, residential neighborhoods	
LU.5.1: Require that new residential development be visually and functionally consistent in scale, mass, and character with structures in the surrounding neighborhood. Encourage residential development that enhances the visual character, quality, and uniqueness of the City's neighborhoods and districts.	The new development would be substantially taller and denser than existing commercial and residential development on Hawthorne Boulevard. In order to lessen the visual impact of the massing in the project vicinity, the development would conform to the slope of the street along Hawthorne Boulevard. Upon completion of the proposed project, the dominant feature of the project site would remain the remnant slope face from both Hawthorn Boulevard and Via Valmonte. Building frontage along both Hawthorne and Via Valmonte would be articulated and varied with landscaping and new street trees to provide a pleasing pedestrian environment. Additionally, the frontage of Building B along Hawthorne Boulevard would be set back from the street by a minimum of 20 feet, and up to 28.5 feet at its widest point. The four single-family homes adjacent to Slope 1 south of Via Valmonte have property lines situated between 100 and 360 feet from the new building development and are situated at elevations between 3 and 54 feet above the highest point of the new building elevation, which would serve to lessen the impact of the new buildings. The project would provide for a uniform development that enhances the area through high-quality architecture and landscaping along a high-visibility corridor. The architectural style of the project, both interior and exterior, would be a contemporary design, and create a cohesive development within a currently degraded site. Additionally, the project would provide approximately 96,385 square feet of landscaping, nearly all of which would be along the Lot 1 development area perimeter and around the perimeters of the four buildings. The remaining undeveloped 18.92 acres would be maintained as open space in its current state. .
LU.5.2: Require the provision of adequate private and common open space for residential units.	Consistent: The project would preserve the balance of the site (Lots 2 and 3), 18.92 acres, as natural open space that will remain its current state. As noted above, Lot 2 is 6.0 acres and would be comprised almost entirely of slopes and bluff face. The remaining 12.92 acres of Lot 3 would be maintained as natural open space in its current state and allow public access, consistent with existing conditions. The Lot 1 development area would include 96,385 square feet of landscaping, nearly all of which would be along the Lot 1 development area perimeter and around the perimeters of the four buildings. The development in Lot 1 would include 24,500 square feet of common-area decks consisting of podium (2nd level) and roof decks and 15,040 square feet of private patios, for a total of 39,540

	square feet of common and private patios (see Figure 3-9). A 5,000-square-foot community room would be along the southern portion of Building B.
LU.5.3: Maintain and encourage visually attractive residential neighborhoods by preserving and adding street trees and other types of streetscape and hardscape, and by encouraging the use of attractive and appropriate private landscaping.	**Consistent:** The project includes proposed landscaping surrounding the proposed buildings and in the proposed brush management zone; see Figure 3.9, *Open Space Plan*. Building frontage along both Hawthorne and Via Valmonte would be articulated and varied with landscaping and new street trees to provide a pleasing pedestrian environment. Additionally, the frontage of Building B along Hawthorne Boulevard would be set back from the street by a minimum of 20 feet, and up to 28.5 feet at its widest point. The project will enhance the visual character of the existing project site by providing an attractive development along Hawthorne Boulevard.
LU.5.6: Strictly enforce City codes, including building and safety, zoning and land use regulations, and property maintenance codes, to maintain safe, high-quality residential neighborhoods.	**Consistent:** The project includes setbacks and rockfall barriers in accordance with California Building Code requirements. The project would comply with the proposed General Plan designations and zoning district.
Objective LU.11: Attractive, high-quality neighborhoods and commercial and industrial districts through the use of innovative design and architectural themes.	
LU.11.6: Encourage site and building design whereby individual projects on separate lots function as unified developments to promote aesthetic and functional cohesiveness, where applicable and within the context of applicable regulations.	**Consistent:** The project has a unified design of high-quality materials. The site would be designed to conform with the existing slope along Hawthorne Boulevard. Building exteriors would be stucco and trespa, and would be designed in a cohesive and uniform manner.
LU.11.10: Encourage site and building design that integrates low-impact development Principles.	**Consistent:** The proposed project would comply with the requirements of the Los Angeles County Low Impact Development Standards Manual, as substantiated in Section 5.8, *Hydrology and Water Quality,* of this DEIR.
HOUSING ELEMENT	
OBJECTIVE H.1: Enhance housing opportunities for all Torrance residents	
H.1.1: Provide a range of different housing types and unit sizes for varying income ranges and lifestyles.	**Consistent:** The project would develop 248 market-rate 1- and 2-bedroom apartment units**.**
CIRCULATION AND INFRASTRUCTURE ELEMENT	
Objective CI.5: To meet the parking needs of businesses, residents, and visitors	
CI-5.1: Require new development to accommodate project-generated parking demand on site.	**Consistent:** the City of Torrance Municipal Code Section 93.2.3 establishes a Multi-Family off-street parking requirement of 2 parking spaces for each dwelling unit of 2-bedrooms or less for residents, and one guest space per 5 units. As such, the proposed project would be required to provide 546 total spaces. Under the Planned Unit Development, the project proposes to provide 484 on-site parking spaces, along with 50 guest spaces, which would be 62 spaces below the standards of the City's Code. Under the proposed project, the parking ratio would be as follows. • 1 Bedroom – 1.54 x 135 = 208 spaces • 2 Bedroom – 2 x 113 = 226 spaces • Guest – 5/248 = 50 spaces Notwithstanding the requirements of City Code, the actual parking requirements for multifamily residential uses have been found to be significantly less than the City's own Code requirement. The Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI), both recommend a lower rate for determining

	parking generation for multi-family residential uses (1.2 spaces/unit and 1.5 spaces/unit respectively). Using the ITE recommended standard of 1.2 spaces per unit, the proposed project would be required to provide 298 parking spaces. Using the ULI recommended standard of 1.5 spaces per unit, the proposed project would be required to provide 372 spaces. Also, there is no street parking provided in the project site. The nearest street parking is in the residential area to the northwest of the project site. Due to the lack of overflow of the guest parking spaces, the proposed project does not comply with the City's neighborhood standards. Under the Planned Unit Development, the applicant would be required to show that the proposed project would result in the systematic execution of the general plan and promote good planning, including the deviation of from the City's parking standards. The proposed project would generally be consistent with this policy. While the proposed project would result in 62 fewer spaces than required by Section 93.23, the 484 spaces would be substantially greater than the industry recommended standard for similar development.
OBJECTIVE CI.9: Infrastructure systems that support current and future development.	
CI-9.1: Require that developers, prior to issuance of building permits, demonstrate that adequate infrastructure exists or will be provided to serve proposed development and not diminish services to existing uses.	**Consistent:** The project water design analysis determined that infrastructure serving the site has sufficient capacity for project utility demands. As described in Chapter 5.14 (Utilities), the project will require the upsizing from an 8-inch to a 12-inch line for 163 linear feet at the 242nd Street segment of the sewer system from the alley to Hawthorne Boulevard and for 259 linear feet in Hawthorne Boulevard from 242nd Street to Pacific Coast Highway. The total upsize length is 422 linear feet. With this upsizing, the lines would be sufficient to convey the anticipated generation of wastewater.
CI.9.7: Pursue the undergrounding of overhead utilities.	**Consistent:** The project would underground several power poles and power lines along Hawthorne Boulevard**.**
COMMUNITY RESOURCES ELEMENT	
OBJECTIVE CR.1: To utilize open space as a means of achieving desirable growth patterns	
CR.1.2: Require the provision of on-site open space in new developments.	**Consistent:** The project would preserve the balance of the site (Lots 2 and 3), 18.92 acres, as natural open space that will remain its current state. As noted above, Lot 2 is 6.0 acres and would be comprised almost entirely of slopes and bluff face. The remaining 12.92 acres of Lot 3 would be maintained as natural open space in its current state and allow public access consistent with existing conditions.
OBJECTIVE CR.3: To develop and maintain open space for recreational use	
CR.3.1: Maximize open space for active and passive recreational uses at strategic and convenient locations throughout the City.	**Consistent:** See analysis of CR.1.2 above.
Objective CR.4: To create and maintain open space as an aesthetic enhancement within the urban environment	
CR.4.1: Use landscaping as an open space feature along City arterial and collector roadways, where sufficient right-of-way is available.	**Consistent:** The proposed open space is next to, and partly visible from, Hawthorne Boulevard and Via Valmonte. Building frontage along both Hawthorne and Via Valmonte would be articulated and varied with landscaping and new street trees to provide a pleasing pedestrian environment. Additionally, the frontage of Building B along Hawthorne Boulevard would be set back from the street by a minimum of 20 feet, and up to 28.5 feet at its widest point. Upon completion of the proposed project, the

	dominant feature would still be Slope 3 along the southern boundary of the project site.
OBJECTIVE CR.19: To preserve scenic vistas wherever possible	
CR.19.2 Look for opportunities to create public open space areas with scenic vistas that all can enjoy.	**Consistent:** The 12.92 acres of Lot 3 would be maintained in its current state and remain open to the public. The proposed open space affords expansive vistas across the Los Angeles Basin and the Palos Verdes Hills.
SAFETY ELEMENT	
OBJECTIVE S.2: To minimize the risks associated with urban fires and wildland	
S.2.2: Continue to enforce the City's fire prevention and suppression requirements for water supply, water flows, fire equipment access, and vegetation clearance in new and modified developments.	**Consistent:** The project would include the installation of five fire hydrants to serve the new buildings. In addition, proposed roads and driveways would provide emergency access to all proposed buildings. A brush management zone would extend 100 feet from the residential building exteriors and would encompass approximately 0.99 acre of the project site. The project provides a 0.99-acre brush management zone.
OBJECTIVE S.6: To provide a high level of fire, police, and emergency medical services	
S.6.3: Adopt reasonable safety standards for areas in the City susceptible to hillside wildfires covering such elements as adequacy of nearby water supplies, land use patterns, routes or throughways for fire equipment, clarity of addresses and street signs, and maintenance of vegetation fuel.	**Consistent:** See analysis of S.2.2 above.

Source: City of Torrance 2009

Hillside and Coastal Overlay Zone

Based upon the information provided by the applicant to date, it appears that the proposed project may comply with the requirements of the Hillside and Coastal Overlay Zone. However, relevant information will still be forthcoming when the applicant installs the silhouette structures as required by the City's regulations. Thus, the final determination as to whether or not the proposed project complies with the requirement of Section 91.41.6, Planning and Design, of the City's Municipal Code is a determination that will not be made until the proposed project proceeds through the precise plan process. As discussed in Section 91.41.6, development in the hillside is subject to special review criteria based on view, light, air, and privacy concerns, and new development must be designed in a manner that will not have an adverse impact upon the view, light, air, and privacy of other properties in the vicinity. In addition, development must be located, planned and designed so as to cause the least intrusion on the view, light, air and privacy of other properties in the vicinity. Section 91.41.6 is primarily focused upon a project's impacts on adjoining private properties and other properties in the immediate vicinity. Many of the aspects of the criteria are designed to protect individual property rights, property values, property investments, and personal rights/quality of life issues, such as privacy, rather than the type of significant environmental effects governed by CEQA.

As described in Table 5.1-1, *Hillside Overlay District Consistency Analysis*, the nearest project building would be setback between 118 feet and 362 feet from the four closest single-family homes along Via Valmonte. Figure 5.1.6c, *24648 Visual Simulation*, suggests that although the proposed building height is above the grade of the residence at 24648 Via Valmonte, the existing topography of the berm on the project site, along with vegetation, would effectively block the view of most of the proposed building. These *Visual Simulations* will need to be verified during the precise planning process with the use of the silhouettes. In addition, the silhouettes will be

necessary to accurately assess whether the scale of the proposed structures is orderly and in harmony with the nearby commercial development and the adjacent residential development. The project's roofline is below the grade of all other residences along Via Valmonte. Additionally, with the implementation of Mitigation Measures AE-1 and AE-2, the proposed project would not result in spill light or glare on the adjacent properties. As such, the proposed project would not result in impacts to adjacent residential uses with regards to light and airflow. The remaining issues, such as impacts on personal privacy, views from adjacent private properties and property values, are contingent upon the assessment of the impacts of the silhouette which will be determined during the precise planning stage. view, light, air and privacy concerns.

Conclusion

For the reasons outlined above, implementation of the proposed project would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Level of Significance before Mitigation: With implementation of the general plan, code, and precise plan amendments contained within the proposed project, Impact 5.9-1 would be less than significant.

5.9.4 Cumulative Impacts

Implementation of the proposed project, including the proposed land use amendments, would be consistent with the applicable goals and policies of the Torrance General Plan, as detailed above under Impact 5.9-1. Similarly, the proposed project would be consistent with the Planning and Design Guidelines of the City's Hillside and Coastal Overlay Zone. Compliance with the Hillside and Coastal Overlay Zone would be assessed on a case-by-case basis for future cumulative projects. Cumulative projects would be subject to compliance with the regional and local plans reviewed in this section. It is reasonable to assume that the cumulative projects would implement and support local and regional planning goals and policies. Cumulative projects would be subject to the applicable permit approval process for the City of Torrance and would incorporate any mitigation measures necessary to reduce potential land use impacts. Therefore, upon implementation of cumulative development discussed in Section 4 of this DEIR, cumulative adverse land use impacts would be less than significant.

5.9.5 Existing Regulations and Standard Conditions

City of Torrance

- Torrance General Plan

- Torrance Zoning Code (Torrance Municipal Code Division 9, *Land Use*). Land uses permitted in the Hillside and Coastal Overlay Zone are set forth in Municipal Code Sections 91.41.7 and 91.41.8, and Planning and Design Guidelines are set forth in Section 91.41.6.

5.9.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.9-1.

5.9.7 Mitigation Measures

No mitigation measures are required.

5.9.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.9.9 References

South Bay Cities Council of Governments (SBCCOG). 2014, March. South Bay Cities Council of Governments Strategic Plan. http://www.southbaycities.org/sites/default/files/SBCCOG_Strategic_Plan_Adopted_March_27_2014.pdf.

Torrance, City of. 2010. General Plan. https://www.torranceca.gov/our-city/community-development/general-plan/plan-2009

———. n.d. Hillside Overlay Area. https://www.torranceca.gov/our-city/community-development/unsorted/hillside.

5.10 NOISE

This section discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; evaluates potential noise impacts associated with the Butcher-Solana Residential Development Project (proposed project); and provides mitigation to reduce noise impacts at sensitive residential locations. This evaluation uses procedures and methodologies as specified by Caltrans and the Federal Highway Administration (FHWA).

The analysis in this section is based in part on the following technical report: Noise Analysis Technical Report for the Solana Torrance Project City of Torrance, California, Dudek, November 2018. A complete copy of this study is included in Appendix H of this DEIR.

Forty-two comments relating to noise impacts on the neighboring community due to construction and operation of the proposed project were received in response to the Initial Study/Notice of Preparation circulated for the proposed project. The potential for excessive noise to create impacts from construction and operation of the proposed development has been analyzed in this section.

5.10.1 Environmental Setting

5.10.1.1 NOISE AND VIBRATION CONCEPTS

Noise is generally defined as loud, unexpected, or undesired sound typically associated with human activity that interferes with or disrupts normal activities. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. The definition of noise as unwanted sound implies that it has an adverse effect on people and their environment.

The following is a brief discussion of fundamental noise concepts and basic terminology.

Sound Pressure Level and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

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NOISE

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds.

Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 5-10.1, *Typical Sound Levels in the Environment and Industry*.

Table 5.10-1 Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban, daytime	50	Large business office; dishwasher next room
Quiet urban, nighttime	40	Theater; large conference room (background)
Quiet suburban, nighttime	30	Library
Quiet rural, nighttime	20	Bedroom at night; concert hall (background)
	10	Broadcast/Recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.

Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling

of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level.

Noise Descriptors

Additional units of measure (i.e., noise metrics) have been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level, $L_{eq}(h)$, is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the primary basis for the City of Torrance noise ordinance criteria for stationary sources. Additional noise metrics include the L_{max}, which is the maximum instantaneous noise level experienced during a given period of time, the L_{min}, which is the minimum instantaneous noise level experienced during a given period of time, and L_n. The L_n noise metric represents the noise level equaled or exceeded 'n' percent of the time. For example, L_{10} is the level equaled or exceeded 10 percent of the time.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time- weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7 am to 10 pm) and nighttime hours (10 pm to 7 am) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours. The CNEL noise metric, or a similar noise metric, the Day Night Level (L_{dn}),[1] is the basis for the City's standards for mobile source noise such as traffic and aircraft noise.

Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

[1] Ldn (also known as DNL) is comparable to CNEL, except that there is no evening component: the period from 7 am to 10 pm is classified as daytime, and no adjustment to the noise levels is made during these hours. The period from 10 pm to 7 am is classified as nighttime, and 10 decibels is added to the hourly L_{eq}s occurring during these hours.

5.10.1.2 VIBRATION FUNDAMENTALS

Groundbourne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground, and can be described in terms of displacement, velocity, or acceleration. Displacement is the distance that a point on a surface moves away from its original static position; vibration velocity is the instantaneous speed that a point on a surface moves; and acceleration is the velocity's rate of change. Each of these descriptors can be used to correlate vibration to environmental effects such as human response and building damage.

Several basic measurement units are commonly used to describe the intensity of ground vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one microinch per second (abbreviated as VdB). A comparison of common groundborne vibration levels, in terms of PPV and VdB, is shown in Table 5.10-2, *Human Reaction to Typical Vibration Levels*. As shown in Table 5.10-2, the threshold of perception is approximately 65 VdB. Typical background vibration levels are between 50 and 60 VdB, and the level for minor cosmetic damage to fragile buildings or blasting generally begins at 100 VdB (FTA 2006), which is equivalent to approximately 0.42 inches per second in terms of PPV.

The strength of groundborne vibration attenuates fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Typically, groundborne vibration generated by humans attenuates rapidly with distance from the source of the vibration. Man-made vibration problems are usually confined to relatively short distances (approximately 500 to 600 feet or less) from the source (FTA 2006).

The calculation to determine PPV at a given distance is:

$$PPVdistance = PPVref*(25/D)^1.5$$

Where:

- PPVdistance = the peak particle velocity in inches per second of the equipment adjusted for distance
- PPVref = the reference vibration level in inches per second at 25 feet
- D = the distance from the equipment to the receiver

The calculation to determine the root-mean square at a given distance is as follows:

$$Lv(D) = Lv(25\ feet) - 30*\log(D/25)$$

Where:

- Lv(D) = the vibration level at the receiver
- Lv(25 feet) = the reference source vibration level
- D = the distance from the vibration activity to the receiver

Caltrans guidelines recommend that a vibration level of 0.2 in/sec PPV not be exceeded for the protection of normal residential buildings, and that 0.08 in/sec PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2013). With respect to human response within residential uses (i.e., annoyance), the Federal Transit Administration recommends a maximum acceptable vibration standard of 80 VdB.

Table 5.10-2 Human Reaction to Typical Vibration Levels

Peak Particle Velocity (PPV)[1]		
Vibration Level	**Human Reaction**	**Effect on Buildings**
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage
Vibration Decibels (VdB)[2]		
Vibration Level	**Human Reaction**	
65 VdB	Approximate threshold of perception for many people.	
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.	
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.	

Sources:
1 Caltrans 2002.
2 FTA 2006

5.10.1.3 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. No federal noise standards apply to this project. The following summarizes the regulations that apply to the proposed project.

California Regulations

Title 24 of the California Code of Regulations requires that an affected building be oriented, shielded, and designed to have sound insulation such that with all exterior doors and windows in the closed position, the

interior noise exposure level attributable to exterior sources will not exceed 45 dBA Day-Night Average Sound Level (Ldn) in any habitable room. Title 24 thus requires an acoustical analysis for any new multifamily residential structures in an area with a noise level of 60 dBA Ldn/CNEL or greater.

City of Torrance Noise Standards

General Plan Noise Element

Recognizing that environmental noise is an important factor in the quality of life for both residents and visitors, the City adopted an update to the Noise Element of the General Plan in 2010. The Noise Element establishes policies to guard against creation of new noise/land use conflicts and to minimize the impact of existing noise sources on the community.

The Noise Element's Table N-3, Torrance Noise/Land Use Compatibility Guidelines, provided in this DEIR as Table 5.10-3, specifies exterior and interior noise standards by proposed land use type and proposed density or intensity (Torrance 2010). The proposed project would have a density of 10.0 dwelling units per acre (du/ac) for the entire site, which equates to a low medium density pursuant to the housing element (adopted October 1, 2013).[2] As shown in Table 5.10-3, the exterior noise standard for low medium density residential uses is 65 dBA Ldn or CNEL, and the interior noise standard is 45 dBA Ldn or CNEL. The maximum acceptable exposure from aircraft-related noise is 60 dBA CNEL.

As stated in the Noise Element,

> These compatibility criteria serve as guidelines. For example, an acoustical analysis must be prepared when noise-sensitive land uses are proposed within noise impact areas. The analysis must show that the project is designed to attenuate noise to meet the City's noise standards in order to receive approval. If the project design does not meet the noise standards, mitigation can be recommended in the analysis. If the analysis demonstrates that the noise standards can be met by implementing the mitigation measures, the project can be approved conditioned upon implementation of the mitigation measures.

Table 5.10-3 Torrance Noise/Land Use Compatibility Guidelines

Property Receiving Noise		Maximum Noise Level Ldn or CNEL, dBA	
Type of Use	Land Use Designations	Interior	Exterior[3]
Residential	Low Density Residential Low Medium Density Residential Medium Density Residential	45	60/65[1]
	Medium High Density Residential	45	65 / 70[2]
	High Density Residential	45	70[1]
Commercial and Office	General Commercial Center	--	70
	Residential Office	50	70
Industrial	Business Park Light Industrial Heavy Industrial	55	75

[2] Lot 1 within the project site, which is the portion of the project site upon which the proposed project would be constructed, would have a density of 43.8 du/ac (43.4 du/ac net); this corresponds to a medium-high density, for which a slightly more permissive set of noise standards for on-site noise (up to 70 dBA Ldn or CNEL exterior) would apply, if the overall project site were of such a density. Because that is not the case, the slightly more restrictive noise standard of 65 dBA Ldn or CNEL is used.

Public and Medical Uses	Public/Quasi-Public/Open Space	50	65
	Hospital/Medical	50	70
Airport	Airport	--	70

Source: Table N-3, Torrance General Plan Noise Element.
1 The normally acceptable standard is 60 dBA. The higher standard is acceptable subject to inclusion of noise-reduction features in project design and construction.
2 Maximum exterior noise levels up to 70 dB CNEL are allowed for Multiple-Family Housing.
3 Regarding aircraft-related noise, the maximum acceptable exposure for new residential development is 60 dBA CNEL.

City of Torrance Municipal Code

Stationary Source Noise

Whereas the noise standards of the Noise Element are primarily used to ensure noise/land use compatibility with transportation noise sources, the noise regulations in the Municipal Code are used to regulate noise from local on-site noise sources, such as mechanical equipment or event noise. Municipal Code, Division 4, Public Health and Welfare, Chapter 6, Noise Regulation, establishes noise level limits in most residential areas of 50 to 55 dBA between 7 am and 10 pm, and 45 to 50 dBA between 10 pm and 7 am, depending on location. The regulations establish regions with differing noise regulations, with the noise standards in Region 3 (where this project site is located as well as the residences to the north) being the most stringent. As shown in Table 5.10-4, *Torrance Municipal Code Noise Regulations*, the highest permitted noise level for residences in Region 3 is 50 dBA from 7 am to 10 pm and 45 dBA from 10 pm to 7 am. as measured from residential property line. Section 46.7.2, subsection 3c of the Municipal Code states that for noises occurring less than 30 minutes per day or less than 6 minutes per night, the highest allowable noise level is adjusted upward by 15 dBA (i.e., for Region 3, 65 dBA from 7 am to 10 pm and 60 dBA from 10 pm to 7 am).

Table 5.10-4 Torrance Municipal Code Noise Regulations

Region of Noise Receiver	Noise Level (dB)	
	Day	Night
3	50	45
4	55	50

Source: City of Torrance Municipal Code, Division 4, Chapter 6, Article 7, Section 46.7.2.

Construction Noise

Noise from construction activities is regulated in the Municipal Code Section 46.3.1, Construction of Buildings and Projects. It is unlawful for any person in the City to operate power construction tools, equipment, or engage in the performance of any outside construction or repair work on buildings, structures, or projects in or adjacent to a residential area involving the creation of noise beyond 50 dB as measured at property lines, except between the hours of 7:30 am and 6:00 pm, Monday through Friday, and 9:00 am to 5:00 pm on Saturdays. Construction is prohibited on Sundays and holidays observed by the City. An exception exists between the hours of 10:00 am to 4:00 pm for homeowners that reside at the property.

Additionally, heavy construction equipment such as pile drivers, mechanical shovels, derricks, hoists, pneumatic hammers, compressors, or similar devices are prohibited to operate at any time within or adjacent to a residential area without first obtaining permission from the Community Development Director to do so. Such request for permission shall include a list and type of equipment to be used and the requested hours and locations of its

use, and the applicant shall be required to show that the selection of equipment and construction techniques has been based on minimization of noise within the limitations of such equipment as is commercially available or combinations of such equipment and auxiliary sound barriers. Such permission to operate heavy construction equipment will be revoked if operation of such equipment is not in accordance with the approval of the Community Development Director. (TMC Section 46.3.1).

5.10.1.4 EXISTING NOISE ENVIRONMENT

A sound level survey was conducted on May 11, 2016, to evaluate existing sound levels and assess potential project noise impacts on the surrounding area. Noise measurements were conducted using a Piccolo Integrating Sound Level Meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 (General Use) sound level meter. The calibration of the sound level meter was verified before and after the measurements, and the measurements were conducted with the measurement microphone covered with a windscreen and positioned approximately five feet above the ground. Each noise measurement lasted for 15 minutes.

Four noise measurement locations were selected (ST1 through ST4), representing existing and/or future noise-sensitive receptors on the project site and in the project vicinity. The measurement locations and measurement data are in the Appendix H (Noise Measurement Locations), and the measured average noise levels and measurement locations are in Table 5.10-5, *Noise Measurement Levels*. As shown in Table 5.10-5, measured ambient noise levels ranged from approximately 58 dBA L_{eq} at ST1 (southeast side of proposed project site) to 64 dBA L_{eq} at ST2 (northeast side of proposed project). The primary noise sources at the sites consisted of traffic along the adjacent roadways. Secondary noise sources included aircraft noise, birds, rustling leaves, distant aircraft, and distant landscaping activities.

Table 5.10-5 Noise Measurement Levels

Monitoring Site	Date	Time	dBA		
			L_{eq}	L_{10}	L_{max}
ST1 Southeast side of project site adjacent to Hawthorne Blvd.	May 11, 2016	11:53 a.m. – 12:08 p.m.	57.5	59.0	64.9
ST2 Northeast side of project site, adjacent to Via Valmonte	May 11, 2016	12:28 p.m. – 12:42 p.m.	64.4	67.0	74.0
ST3 Residence at 3662 Blair Way, east of project site	May 11, 2016	1:33 p.m. – 1:48 p.m.	62.9	65.0	68.5
ST4 Residence at 24648 Via Valmonte, north of project site	May 11, 2016	2:02 p.m. – 2:17 p.m.	60.5	63.0	74.5

Noise monitoring conducted on 05/11/2016 during the hours of 11:53 am to 2:17 pm.

5.10.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

N-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

N-2 Generation of excessive groundborne vibration or groundborne noise levels.

N-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

The Initial Study, included as Appendix A, determined that impacts related to be located in the vicinity of a private airstrip would be less than significant. With the publication of the updated CEQA Guidelines in December 2018, the thresholds of significance for noise impacts have been revised. This EIR utilizes the revised CEQA Guidelines.

Significant Changes In Ambient Noise Levels

The City of Torrance noise regulations do not directly address the incremental threshold for community noise increases (i.e., Threshold N-1, "A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project"). Neither the City's General Plan Noise Element nor the Municipal Code have quantified levels of increase in noise above ambient that are considered "substantial." Some guidance regarding the determination of a substantial permanent increase in ambient noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that interferes with speech or the desire for a tranquil environment or disturbs sleep.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of Ldn. The changes in noise exposure that are shown in Table 5.10-6, *Measures of Substantial Increase for Community Noise Sources*, are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

Table 5.10-6 Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level without Project (Ldn)	Assumed Significant If Ambient Noise Levels Increase by:
<60	+ 5 dB or more
60-65 dB	+ 3 dB or more
>65 dB	+ 2 dB or more

Source: FICON, 1992

Construction Noise

For the purposes of determination of significant impact from temporary construction noise, the City of Torrance applies a threshold of 75 dBA, based in part upon Table N-2 of the General Plan Noise Element. The City of Torrance General Plan Update Draft EIR (2009), and included in Appendix H, further states in Impact N-4 that "construction activities substantially elevating the ambient noise environment at noise-sensitive uses for a substantial amount of time" would be considered to result in a substantial temporary or periodic noise increase, resulting in a significant impact.

Vibration Standards

Impacts related to excessive groundborne vibration would be significant if the project results in the exposure of persons to or generation of excessive ground-borne vibration equal to or in excess of 80 VdB for annoyance criteria or 0.2 inches/second PPV for potential for structural damage. Construction activities within 200 feet and pile driving within 600 feet would be potentially disruptive to vibration-sensitive operations (such as concert halls or television studios) (FTA 2006).

5.10.3 Environmental Impacts

The following impact analysis addresses increases in noise and vibration levels for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.10-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project in excess of standards. [Threshold N-1]

Exterior Noise Levels During Construction

Construction of the proposed project is anticipated to take place over a period of approximately 29 months. As detailed above in Regulatory Standards, the City restricts the times of day when construction may occur (i.e., 7:30 am to 6 pm Mondays through Fridays, 9 am to 5 pm on Saturdays and not at all on Sundays and holidays observed by the City). Also, operation of heavy construction equipment such as pile drivers, mechanical shovels, compressors, or similar devices are prohibited without first obtaining permission from the Community Development Director. For the purposes of determining significant impacts from construction noise, a threshold of 75 dBA is used.

Construction of the proposed project would take place within the hours specified in Article 3, Section 46.3.1 of the City's Municipal Code. Construction operations shall not occur between 6 pm and 7:30 am Monday through Friday, 9 am to 5 pm on Saturday or at any time on Sunday or on holidays observed by the City of Torrance. The hours of construction, including noisy maintenance activities and all spoils and material transport, shall be restricted to the periods and days permitted by the local noise or other applicable ordinance. Additionally, no construction vehicles, material deliveries, or staging prior to the allowable hours listed above, and no early or continuous concrete pours shall be permitted that extend beyond the hours listed above. Permission for operation of heavy equipment shall be submitted to the Community Development Director;

however, no special construction techniques (i.e., pile driving or blasting) are anticipated to be necessary for this project.

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time each piece is in operation, condition of each piece of equipment, and number of pieces that would operate on the site. The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is presented in Table 5.10-7, *Typical Construction Equipment Noise Element Levels*. The noise values represent maximum noise generation, or full-power operation of the equipment. As an example, a loader and two dozers, all operating at full power and relatively close together, would generate a maximum sound level of approximately 90 dBA at 50 feet from their operations. As the distance between equipment or separation of areas with simultaneous construction activity increases, dispersion and distance attenuation reduce the effects of the separate noise sources added together. In addition, typical operating cycles may involve 2 minutes of full-power operation, followed by 3 or 4 minutes at lower levels. The average noise level during construction activities is generally lower (typical levels of approximately 88 dBA Leq at a distance of 50 feet) because maximum noise generation may only occur up to 50 percent of the time. Noise levels from construction operations decrease at a rate of approximately 6 dB per doubling of distance from the source.

Table 5.10-7 Typical Construction Equipment Noise Element Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jackhammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Roller	74
Saw	76
Truck	88

Source: FTA 2006.

In order to assess noise from construction activities, air quality and greenhouse gas construction data was used, summarized here in Table 5.10-8, *Construction Equipment Assumptions*. Distances and acoustical shielding (where applicable) were input into the Federal Highway Administration's Roadway Construction Noise Model (RCNM)

noise model. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two excavators, a loader, a dump truck), the duty cycle for each piece of equipment (i.e., percentage of hours the equipment typically works per day), acoustical shielding from intervening terrain or structures, and the distance from the sensitive noise receptor. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were used for this noise analysis.

Table 5.10-8 Construction Equipment Assumptions

	L_{min}	L_{eq}	L_{max}
Monitoring Site	**Equipment Type**	**Quantity**	**Usage Hours**
Grading	Excavators	2	8
	Rubber tired loaders	1	8
Building Construction – Parking Garage	Tractors/loaders/backhoes	2	8
Paving	Pavers	1	8
	Paving equipment	1	8
	Rollers	1	8
Building Construction – Residential (above garage)	Cranes	1	6
	Forklifts	2	8
	Welders	1	4
Architectural Coating	—	—	—

Source: Appendix B

The nearest noise-sensitive land use (the residence at 24648 Via Valmonte) is located approximately 77 feet north of the development site property line, approximately 118 feet or more from actual building construction work, and approximately 250 feet away from the acoustic center of construction activity (the idealized point from which the energy sum of all construction activity noise near and far would be centered). During short periods of time (during grading/swale construction activities and perimeter retaining wall construction), construction activities would take place within approximately 77 feet of the nearest residential property; however, the direct view of the work occurring in proximity of the nearest residence would be shielded by an existing intervening berm[3] at the top of the slope. Based upon calculations estimating terrain shielding, the berm would provide a theoretical benefit of approximately 19 dB noise reduction (Dudek 2018).[4] In real-life applications, noise barrier attenuation is generally limited to approximately 10 to 15 dB. For the purposes of this analysis, it was conservatively assumed that the berm would provide approximately 12 dB of noise reduction during the periods when construction takes place near the project boundary, but during other work phases no shielding would occur. For the third- and fourth-nearest residences, no terrain shielding was assumed.

The construction noise analysis input and output are provided in Appendix H. The results (as shown in Table 5.10-9, *Construction Noise Model Results Summary*) are presented for each of the four nearest residences adjacent

[3] The elevation of the nearest residence (located at 2648 Via Valmonte) is approximately 230 feet at the residential property line; the work area nearest to the residence has an elevation of approximately 204 feet; and the intervening berm, located approximately 30 feet from the residential property line, has an elevation of approximately 240 feet.

[4] Provided in Appendix H.

to the project site, for both the nearest point of the construction work and the more typical condition where construction equipment would be at varying locations near and far on-site. The table shows the L_{eq} (average noise level), the estimated maximum noise level (L_{max}), and the level equaled or exceeded 10 percent of the time (L_{10}). As shown in Table 5.10-9, noise levels on an L_{eq} basis during construction at the nearest residential receivers are estimated to range from approximately 55 dBA to 73 dBA L_{eq}; noise levels on an L_{10} basis during construction are estimated to range from approximately 58 dBA to 76 dBA L_{10}; and noise levels on an L_{max} basis are estimated to range from approximately 59 dBA to 74 dBA L_{max}. The third-nearest residential location (24704 Via Valmonte) is predicted to have higher noise levels than the two nearer residences. This is because the first and second residences have the benefit of terrain shielding, particularly when the construction equipment would be near the project boundary, whereas the third and fourth residences do not. It is also noted that in several instances the L_{10} noise levels are higher than the L_{max} noise levels. This is because the RCNM model shows the maximum noise level of the loudest piece of equipment for each construction phase, whereas the L_{10} noise level (similarly to the L_{eq} noise level) represents the cumulative sum of each phase.[5]

Table 5.10-9 Construction Noise Model Results Summary

Residence	Construction Phase	Construction Noise at Receiver Distances (dBA)				
		Nearest or Typical Construction Work Location Distance (feet)	Leq	L10	Lmax	75 dBA Significance Threshold Exceeded?
24648 Via Valmonte	Grading	Nearest Construction Work (77.5')	65	68	65	No
		Typical Construction Work (245')	68	71	67	No
	Paving	Nearest Construction Work (77.5')	63	66	64	No
		Typical Construction Work (245')	66	70	67	No
	Building Construction - Parking Garage	Nearest Construction Work (96')	63	66	66	No
		Typical Construction Work (164')	71	74	74	No
	Building Construction - Residential	Nearest Construction Work (96')	59	62	63	No
		Typical Construction Work (164')	63	66	67	No
24660 Via Valmonte	Grading	Nearest Construction Work (177')	60	63	60	No
		Typical Construction Work (410')	63	66	62	No
	Paving	Nearest Construction Work (177')	59	62	59	No
		Typical Construction Work (410')	62	65	62	No
	Building Construction - Parking Garage	Nearest Construction Work (200')	59	62	61	No
		Typical Construction Work (307')	66	69	68	No
	Building Construction - Residential	Nearest Construction Work (200')	55	58	59	No
		Typical Construction Work (307')	59	62	62	No
24704 Via Valmonte	Grading	Nearest Construction Work (135')	73	76	72	Yes (76 dBA L10)
		Typical Construction Work (370')	64	67	63	No
	Paving	Nearest Construction Work (135')	71	74	71	No
		Typical Construction Work (370')	63	66	63	No
		Nearest Construction Work (240)	67	70	70	No

[5] This is because it is unlikely that any two or more pieces of construction equipment would generate their maximum noise levels simultaneously.

	Building Construction - Parking Garage	Typical Construction Work (315')	65	68	68	No
	Building Construction - Residential	Nearest Construction Work (240)	64	67	67	No
		Typical Construction Work (315')	60	63	63	No
24706 Via Valmonte	Grading	Nearest Construction Work (187')	70	73	69	No
		Typical Construction Work (450')	63	66	62	No
	Paving	Nearest Construction Work (187')	69	72	69	No
		Typical Construction Work (450')	61	64	61	No
	Building Construction - Parking Garage	Nearest Construction Work (347')	64	67	67	No
		Typical Construction Work (425')	63	66	65	No
	Building Construction - Residential	Nearest Construction Work (347')	60	63	64	No
		Typical Construction Work (425')	58	61	62	No

Source: Appendix H.

Based upon this analysis, the noise from construction would exceed the City's construction noise significance threshold of 75 dBA at one location; at 24704 Via Valmonte, during grading activities that would occur nearest the project's northwest boundary near the residence. The noise level is estimated to be approximately 76 dBA L_{10} at the residential property line. Noise from construction activities would therefore exceed the City of Torrance threshold of significance for construction noise at this location. The noise impact would be considered significant.

Interior Noise Levels During Construction

Typically, with the windows open, building shells provide approximately 15 dB of noise reduction, while with windows closed, modern residential construction generally provides a minimum of 25 dB attenuation. Thus, the interior noise levels at the nearest residences during the nearest construction work are estimated to be approximately 40 to 58 dBA Leq with windows open and 30 to 48 dBA Leq with windows closed. Noise levels of this magnitude are moderate to relatively low in the context of typical daytime community noise, although it is likely that such noise would be audible at times.

Impact 5.10-2 Project implementation would result in long-term operation-related noise that would not exceed local standards. [Thresholds N-1]

Potential noise impacts from operation of the proposed project include increases in noise from project-related traffic as well as from on-site operational noise (i.e., mechanical equipment, parking structure, rooftop deck activities).

Traffic Noise

The proposed project would generate traffic, primarily along Hawthorne Boulevard and Via Valmonte. Potential noise effects from vehicular traffic were assessed using FHWA's Traffic Noise Model, version 2.5. The model was calibrated using the measured average noise levels shown in Table 5.10-5 and the concurrently counted traffic volumes. The same traffic volumes and vehicle composition ratios counted during the noise

measurements were used to calibrate the model and verify the input used in the noise model. The modeled noise levels for the monitoring locations were within two decibels of the measured noise levels. This result confirms the assumptions used in the noise model. Traffic noise modeling data and traffic volume input data is in Appendix H.

Consistent with the Traffic Impact Study provided by KHR Associates (KHR 2019), provided as Appendix J, the modeled traffic scenarios included the Existing (i.e., baseline conditions), Existing plus Project, Cumulative (Year 2019), and Cumulative plus Project traffic volumes and speeds. Noise levels were modeled at representative on-site and off-site noise-sensitive receivers. The receivers, which represent noise-sensitive receivers with the most potential to be impacted by project-related traffic noise. Receivers at ST3, ST4, and R56 represent the existing off-site receivers, and R1 through R55 represent the proposed on-site receivers.

The information provided from this modeling was compared to the noise impact significance criteria in the City's General Plan (i.e., a 65 dBA Ldn noise standard for noise-sensitive land uses) and the FICON thresholds for noise increase (i.e., a 5 dBA increase in an ambient noise environment of less than 60 dBA Ldn, a 3 dBA noise increase in an ambient noise environment of 60–65 dBA Ldn, and a 2 dBA increase in an ambient noise environment of more than 65 dBA Ldn) to assess whether project traffic noise would cause a significant impact and, if so, where.

Off-Site Traffic Noise

The results of the comparisons for nearby existing off-site receivers (as represented by ST-3, ST- 4, and R-56) are presented in Table 15.10-10, *Traffic Noise at Adjacent Noise-Sensitive Receivers (dBA Ldn)*.

Table 5.10-10 Traffic Noise at Adjacent Noise-Sensitive Receivers (dBA Ldn)

Receiver	Existing	Existing + Project	Noise Increase (dB)	Cumulative	Cumulative + Project	Noise Increase (dB)
ST3 – Residences east of project site	61	61	0	61	61	0
ST4 - Residence north of project	63	63	0	64	63	-0.1
R56 - Residences northeast of project	66	66	0	66	66	0

Source: Appendix H.

As shown in Table 5.10-10, the modeled existing and cumulative traffic noise levels range from approximately 61 dBA Ldn at receiver ST3 to 66 dBA Ldn at R56, both with and without the proposed project. The incremental increase resulting from project-related traffic would increase the traffic noise levels by less than 1 dBA (0 dBA Ldn when rounded to whole numbers) along the study area roadways. At ST4, the traffic noise level is predicted to decrease by 0.1 dB in the cumulative plus project scenario because the project's buildings would provide additional shielding from traffic noise on Hawthorne Boulevard south of Via Valmonte. The project would not cause an exceedance of City noise standards for transportation noise, and would not result in an audible or measurable increase in traffic noise. Project-related traffic noise impacts would therefore be less than significant.

On-Site Exterior Traffic Noise

The results of the noise analysis for traffic noise levels at proposed on-site receivers are provided in Table 5.10-11, *Summary of On-Site Future (Cumulative plus Project) Unmitigated Traffic Noise Levels (dBA Ldn)*. On-site noise-sensitive-receiver locations consisted of the building facades of the four residential levels (i.e., levels 2 through 5) of Buildings A, B, and C and the proposed on-site outdoor recreation/pool areas. Based upon information provided by the applicant, each of the residential units would have outdoor open spaces in the form of balconies; however, these spaces are not subject to City of Torrance outdoor noise standards.

As shown in Table 5.10-11, the results of the noise modeling indicate that on-site noise levels at the facades with a direct view of Hawthorne Boulevard would range from 65 to 73 dBA Ldn. Because the project's proposed balconies are not subject to the 65 dB Ldn noise standard, noise mitigation is not required for these exterior areas. The future noise levels at the proposed outdoor common areas (R1 to R13) are predicted to range from 29 to 64 dBA Ldn, and thus would meet the City's exterior noise level criterion. Therefore, the noise impact would be less than significant for the shared (common) exterior areas.

On-Site Interior Traffic Noise

The City and the state require that interior noise levels not exceed a CNEL or Ldn of 45 dBA within the habitable rooms of residences. Typically, with the windows open, building shells provide approximately 15 dB of noise reduction. Therefore, rooms exposed to an exterior Ldn greater than 60 dBA could result in an interior Ldn greater than 45 dB. The State Building Code recognizes this relationship and therefore requires interior noise studies when the exterior noise level is projected to exceed 60 dBA Ldn.

The data shown in Table 5.10-11 indicates that the future noise levels would range up to 73 dBA Ldn at the facades of the on-site residences adjacent to Hawthorne Boulevard. Thus, the unmitigated interior noise level within the habitable rooms of these dwelling units could exceed the 45 dB Ldn or CNEL noise criterion, resulting in a potentially significant impact. As detailed in mitigation measure NO-2, a subsequent interior noise analysis will be required for the units shown in bold in Table 5.10-11. The impact would be less than significant with mitigation. Dwelling units that are oriented such that the doors and windows are interior to the project site (i.e., do not have a direct view of Hawthorne Boulevard) would have traffic noise level exposures of less than 60 dB Ldn.

Table 5.10-11 Summary of On-Site Future (Cumulative plus Project) Unmitigated Traffic Noise Levels (dBA Ldn)

Modeled Receiver #	Floor Level			
	2nd Level	3rd Level	4th Level	5th Level
R1 - Outdoor community area rooftop deck - 1	n/a	60	n/a	n/a
R2 - Outdoor community area rooftop deck - 2	n/a	53	n/a	n/a
R3 - Outdoor area Bldg B	42	n/a	n/a	n/a
R4 - Outdoor area Bldg B west side	40	n/a	n/a	n/a
R5 - Outdoor area Bldg B west side	47	n/a	n/a	n/a
R6 - Outdoor area Bldg A west side	29	n/a	n/a	n/a
R7 - Outdoor area Bldg A west side	29	n/a	n/a	n/a

Table 5.10-11 Summary of On-Site Future (Cumulative plus Project) Unmitigated Traffic Noise Levels (dBA Ldn)

Modeled Receiver #	Floor Level			
	2nd Level	3rd Level	4th Level	5th Level
R8 - Outdoor area Bldg C	33	n/a	n/a	n/a
R9 - Outdoor area Bldg C south side	64	n/a	n/a	n/a
R10 - Outdoor area Bldg C southwest side	60	n/a	n/a	n/a
R11 - Pool / Rec Area at Parking Structure	n/a	n/a	n/a	49
R12 - Pool / Rec Area at Parking Structure	n/a	n/a	n/a	50
R13 - Pool / Rec Area at Parking Structure	n/a	n/a	n/a	52
R14 - Bldg B	**61**	**62**	**62**	**62**
R15 - Bldg B	**65**	**65**	**66**	**66**
R16 - Bldg B	**66**	**67**	**67**	**66**
R17 - Bldg B	**68**	**68**	**68**	**68**
R18 - Bldg B	**69**	**69**	**69**	**69**
R19 - Bldg B	**72**	**72**	**72**	**71**
R20 - Bldg B	**73**	**72**	**72**	**72**
R21 - Bldg B	**73**	**72**	**72**	**72**
R22 - Bldg B	**73**	**73**	**72**	**72**
R23 - Bldg B	57	57	58	**69**
R24 - Bldg B	43	44	49	58
R25 - Bldg B	44	44	48	54
R26 - Bldg B	51	51	56	52
R27 - Bldg B	40	40	42	46
R28 - Bldg B	51	51	52	52
R29 - Bldg B	51	52	52	53
R30 - Bldg B	43	45	45	47
R31 - Bldg B	32	36	36	42
R32 - Bldg B	41	42	43	45
R33 - Bldg B	46	49	49	49
R34 - Bldg B	47	49	52	50
R35 - Bldg A	56	59	**61**	**61**
R36 - Bldg A	49	52	54	56
R37 - Bldg A	45	48	49	52
R38 - Bldg A	35	34	36	37
R39 - Bldg A	38	39	43	43
R40 - Bldg C	**69**	**69**	**69**	**68**
R41 - Bldg C	**73**	**72**	**72**	**72**
R42 - Bldg C	**73**	**73**	**72**	**72**
R43 - Bldg C	**72**	**72**	**72**	**72**
R44 - Bldg C	**73**	**73**	**72**	**72**
R45 - Bldg C	**68**	**68**	**68**	**68**
R46 - Bldg C	51	53	55	55
R47 - Bldg C	**72**	**72**	**72**	**72**
R48 - Bldg C	**63**	**64**	**64**	**64**
R49 - Bldg C	60	**61**	**61**	**61**

Table 5.10-11 Summary of On-Site Future (Cumulative plus Project) Unmitigated Traffic Noise Levels (dBA Ldn)

Modeled Receiver #	Floor Level			
	2nd Level	3rd Level	4th Level	5th Level
R50 - Bldg C	52	52	52	52
R51 - Bldg C	49	52	54	54
R52 - Bldg C	38	40	42	45
R53 - Bldg C	54	54	54	55
R54 - Bldg C	42	45	48	48
R55 - Bldg C	**66**	**67**	**66**	**66**

Source: Appendix H.
Notes: **Bolded** numbers represent building façade locations exceeding 60 dBA Ldn; these units will require subsequent interior noise analysis to verify compliance with the 45 dBA Ldn noise standard for habitable rooms.

Mechanical Noise

Based upon information provided by the applicant and the most recent plan set, exterior heating, ventilation and air conditioning (HVAC) equipment (i.e., the condenser units) will be mounted on the rooftops of Buildings A, B, and C. The HVAC units will consist of small residential condensers—one per unit—on the roofs over the building corridors. HVAC specifications are provided in Appendix H. The two-ton HVAC units used would each have a dimensionless sound power level of 71 dBA (Dudek 2018).[6] The nearest existing residence would be approximately 150 feet north of the nearest bank of HVAC units atop building A.[7] Assuming a sound power level of 71 dBA, the noise level at a distance of 150 feet from one HVAC unit would be approximately 30 dBA at the nearest residential unit. If all 24 of the nearest set of individual banked units were operating simultaneously, the resultant noise level at the nearest existing residence (at 24648 Via Valmonte) would be approximately 44 dBA. The estimated HVAC noise levels at the four adjacent residences to the north and west of the project site are provided in Table 5.10-12, *Summary of HVAC Noise Levels at Adjacent Off-Site Residences (dBA Leq)*. The noise levels would be less than the City of Torrance Region 3 exterior noise ordinance standards of 50 dBA from 7 am to 10 pm and 45 dBA from 10 pm to 7 am. The noise impact would be less than significant.

Interior noise levels would be substantially lower. Typically, with windows open, building shells provide approximately 15 dB of noise reduction, while with windows closed, modern residential construction generally provides a minimum of 25 dB attenuation. Thus, the interior noise level from project-related HVAC noise at the nearest residence is estimated to be approximately 29 dBA with windows open and 19 dBA with windows

[6] Sound power or acoustic power is the rate at which sound energy is emitted, reflected, transmitted or received, per unit time. It is calculated and expressed in watts and as sound power level Lw in decibels It is the power of the sound force on a surface of the medium of propagation of the sound wave. For a sound source, unlike sound pressure (Lp), sound power is neither room-dependent nor distance-dependent. Sound pressure is a measurement at a point in space near the source, while the sound power of a source is the total power emitted by that source in all directions. The relation between sound power and sound pressure utilized for this analysis was the following:

Lp=Lw-20*Log(R)+2.5, where R is the source-receiver distance of interest, in feet—as for a free field above a reflecting plane (Dudek 2018).

[7] Horizontal distance as measured using the project site plan. The actual straight-line distances would be slightly greater because of the differences in vertical elevations. Thus the noise estimates err on the conservative side.

closed. Noise levels of this magnitude are low in the context of typical community noise and under most circumstances would be inaudible because they would be masked by other community noises.

Table 5.10-12 Summary of HVAC Noise Levels at Adjacent Off-Site Residences (dBA Leq)

Receiver Description	HVAC Noise	Applicable Region 3 Daytime Standard (50 dBA Leq) Exceeded?	Applicable Region 3 Nighttime Standard (45 dBA Leq) Exceeded?
Nearest Residential P/L (24648 Via Valmonte)	43.8	No	No
2nd Nearest Residential P/L (24660 Via Valmonte)	40.0	No	No
3rd nearest Residential P/L (24704 Via Valmonte	37.7	No	No
4th nearest Residential P/L (24706 Via Valmonte	35.4	No	No

Source: Appendix H.

Rooftop Deck/Pool Area and Parking Structure Noise

A rooftop deck/pool and spa area (rooftop deck) is proposed as part of the project. The rooftop deck would be on the upper level of the eastern portion of the project's parking structure, located along the south side of the project site. A pool, spa, deck chairs, cabanas, a fire pit, and picnic table/chair sets are proposed. The maximum permitted occupancy of the rooftop deck would be 220 people. The rooftop deck would be conditioned such that no amplified voice, music, live music, or other loud events would be permitted, and the area would be closed at 10 pm.

The distance from the nearest residence's property line (24648 Via Valmonte) to the nearest side of the rooftop deck area is approximately 415 feet, and the distance from the nearest residence to the rooftop deck's acoustic center is approximately 484 feet.[8] The view of the pool deck would be obstructed by the intervening proposed residential structures for the nearest residence.[9]

Based upon reference sound levels from the literature for a raised male voice, 65 dBA at 3.28 feet (Dudek 2018), the resultant noise levels at nearby residential land uses were estimated, as shown in Table 5.10-13. Note that this is a very conservative estimate, as it is highly unlikely that there would be 220 people using the facility at any one time, and that the raised male voices would be sustained for extended periods (i.e., 30 minutes or more during any one-hour period). Additionally, it is anticipated that there would generally be some combination of male and female residents and guests, and the noise levels would be lower for this reason as well (because the typical female voice is of a lower sound power). As summarized in Table 5.10-13, *Summary of Noise Levels from Rooftop Deck at Adjacent Off-Site Residences (dBA Leq)*, the conservative estimate for noise levels for the maximum-use scenario (220 voices) would range from 40 dBA L_{eq} at the nearest residential property line to 42 dBA Leq at the second-nearest residential property line.[10] The input and output data for these results are provided in

[8] The acoustic center is the idealized point from which the energy sum of all activity noise, near and far, would be centered. The acoustic center is derived by taking the square root of the product of the nearest and the farthest distances.

[9] The rooftop pool deck elevation would be approximately 250.4 feet above mean sea level (amsl). The nearest residence's elevation is approximately 230 feet amsl, and the intervening structure (Building B) would have a rooftop elevation of approximately 249.3 feet amsl.

[10] Based upon the relative distances and elevations of the receivers, noise sources and intervening structures, shielding attenuation calculations (Dudek 2018) were performed. The input and output sheets for these calculations are provided in Appendix H. It was

Appendix H. These noise levels would be below the applicable City of Torrance noise standard for activities taking place between the hours of 7 am and 10 pm of 50 dBA L_{eq}. Additionally, based on the ambient noise measurements, these noise levels would be well below typical noise levels in the project area, and thus would not result in a substantial noise increase. Therefore, the noise from on-site activities at the rooftop deck would be less than significant.

Table 5.10-13 Summary of Noise Levels from Rooftop Deck at Adjacent Off-Site Residences (dBA Leq)

Receiver Description	Receiver Distance (feet)	Raised Male Voices (dBA)	Acoustical Shielding[1] (if any)	Resultant (dBA Leq)	Applicable Region 3 Standard (50 dBA2) Exceeded?
Nearest Residential P/L (24648 Via Valmonte)	484	45.0	5.0	40	No
2nd Nearest Residential P/L (24660 Via Valmonte)	654	42.0	0.0	42	No
3rd nearest Residential P/L (24704 Via Valmonte	710	41.3	0.0	41	No
4th nearest Residential P/L (24706 Via Valmonte	711	41.3	0.0	41	No

Source: Appendix H.
Notes: Conservatively assumes a maximum legal occupancy of 220 persons, all males with voices raised simultaneously and continuously.
1 Acoustical shielding calculations provided in Appendix H.
2 Applicable from 7 am to 10 pm. The rooftop deck would be closed outside of these hours.

Potential Acoustical Reverberation Effects

Potential acoustical reverberation effects from the steep slopes located to the south and west of the project site was evaluated as part of this project. In order for a surface to be effective in reflecting sound, the characteristics of the surface are important. Specifically, a good reflecting surface is smooth, hard, and rigid (Caltrans 2013). Ideal reflecting surfaces include glass, metal, polished stone, and smooth walls. The slopes on the south and west sides of the project site are not good reflectors of sound. Based upon a recent soils report, the slope to the south exposes Miocene age Monterey Formation materials that are composed primarily of "interbedded sandstone, siltstone, and diatomaceous siltstone (Dudek 2018). These materials are composed of predominantly silt and clay…". The slope on the west exposes Pleistocene age San Pedro Sand. These materials are composed primarily of massive, uncemented sand and silt.

Examination of the slope further confirms that these soils are not resistant to weathering; the slope face is dissected by multiple small and large gullies. Vegetation is also scattered across the slope face. There is no continuous "plane" conducive to reflecting sound, but rather a very irregular surface where gullies and vegetation will minimize reflection. The gullying is a direct representation of the softness of the materials – water easily infiltrates the surface, as would sound waves.

Because these adjacent slopes are rough and relatively soft, they are more likely to be effective absorbers (rather than reflectors) of sound. Therefore, the potential for the adjacent slopes to reflect project-related noise into the adjacent residential neighborhood is negligible and impacts would be less than significant.

determined that at the nearest residence, the direct view of the rooftop deck would be blocked by Building B, which would reduce the noise level by 5 decibels. The direct view of the rooftop deck for the other adjacent residences would not be blocked by intervening structures, and no additional noise reduction was claimed at these locations.

Parking Structure Noise

Vehicles

The proposed five-story parking structure would be located along the project's southern boundary. The parking structure would have a solid wall on its southern side and would be partially open to the north, west, and east sides. The distance from the nearest residence to the nearest side of the parking structure is approximately 300 feet, and the distance from the nearest residence to the parking structure's acoustic center is approximately 418 feet. The view of the parking structure would be obstructed by the proposed residential structures for the nearest three residences (24648, 24660, and 24704 Via Valmonte), which would result in additional reduction of noise from the parking structure.[11] At the fourth-nearest residence (24706 Via Valmonte), the view of the parking structure would not be obstructed; however, the distance from the property line at 24706 Via Valmonte to the parking structure would be substantially further, at approximately 706 feet.

Based upon noise measurements conducted at a similar parking structure (five stories, with open sides), noise levels from the proposed facility during peak commute hours (early morning and early evening hours) are anticipated to be approximately 63 dBA L_{eq} at a distance of 30 feet from the open side of the structure, with instantaneous maximum noise levels (L_{max}) of approximately 72 dBA at 30 feet occurring periodically from remote locking system "chirps," horn beeps, etc.[12] (Dudek 2016). As shown in Table 5.10-14, *Summary of Average Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA L_{eq})*, the estimated noise levels from parking structure noise at the nearest off-site residential uses would range from approximately 28 dBA L_{eq} to approximately 36 dBA L_{eq}. This would be less than the City of Torrance Municipal Code Region 3 noise standards of 50 dBA during daytime hours and 45 dBA during nighttime hours. Therefore, the noise from the parking structure noise would be less than significant.

Table 5.10-14 Summary of Average Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA L_{eq})

Receiver Description	Receiver Distance (feet)	Unshielded Parking Structure Noise (During Peak Traffic Hours) (dBA L_{eq})	Acoustical Shielding[1] (if any) (dB)	Resultant Parking Structure Noise (During Peak Traffic Hours) (dBA L_{eq})	Applicable Region 3 Nighttime Standard (45 dBA L_{eq}) Exceeded?
Nearest Residential P/L (24648 Via Valmonte)	418	40.1	12.0	28.1	No
2nd Nearest Residential P/L (24660 Via Valmonte)	575	37.3	7.6	29.8	No
3rd nearest Residential P/L (24704 Via Valmonte	642	36.4	6.0	30.4	No

[11] The uppermost parking deck elevation would be approximately 236 feet amsl. The lowest level would be approximately 193 feet amsl. The calculations assumed that the parking noise would emanate from the middle floor, which is approximately 215 feet amsl. This is conservative because the behavior of the average driver is to park as soon as a usable space is available, and therefore most parking structure noise would emanate from the lower floors.

[12] Additional nuisance noises such as overly sensitive, loud car alarms or unusually loud exhaust systems can and do occasionally result in higher noise levels, which can be disruptive. Such nuisances, when they become a frequent occurrence, are within the purview of City of Torrance code enforcement action.

Table 5.10-14 Summary of Average Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA L_{eq})

Receiver Description	Receiver Distance (feet)	Unshielded Parking Structure Noise (During Peak Traffic Hours) (dBA L_{eq})	Acoustical Shielding[1] (if any) (dB)	Resultant Parking Structure Noise (During Peak Traffic Hours) (dBA L_{eq})	Applicable Region 3 Nighttime Standard (45 dBA L_{eq}) Exceeded?
4th nearest Residential P/L (24706 Via Valmonte	706	35.6	0.0	35.6	No

Source: Appendix H.
Notes: Conservatively assumes a maximum legal occupancy of 220 persons, all males with voices raised simultaneously and continuously.
1 Acoustical shielding calculations provided in Appendix H.

The corresponding maximum noise levels from the proposed parking structure (which, similarly to the data shown in Table 5.10-14 for average noise levels, were derived from the measurements conducted at a similar parking facility) are presented in Table 5.10-15, *Summary of Maximum Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA L_{max})*. As shown in Table 5.10-15, the very brief L_{max} noise levels would range from approximately 37 to 45 dBA, which would be well below the allowable noise level for noises occurring less than 30 minutes per day or less than 6 minutes per night of 60 dBA (45 dBA+15 dBA) for nighttime noise. Therefore, the noise from parking structure activities would be less than significant.

Table 5.10-15 Summary of Maximum Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA L_{max})

Receiver Description	Receiver Distance (feet)	Unshielded Parking Structure Noise (During Peak Traffic Hours) (dBA Leq)	Acoustical Shielding[1] (if any) (dB)	Resultant Parking Structure Noise (During Peak Traffic Hours) (dBA L_{max})	Applicable Region 3 Nighttime Standard (60 dBA for short-term/instantaneous noise L_{max}) Exceeded?
Nearest Residential P/L (24648 Via Valmonte)	418	49.1	12.0	37	No
2nd Nearest Residential P/L (24660 Via Valmonte)	575	46.3	7.6	39	No
3rd nearest Residential P/L (24704 Via Valmonte	642	45.4	6.0	39	No
4th nearest Residential P/L (24706 Via Valmonte	706	44.6	0.0	45	No

Source: Appendix H.
1 Acoustical shielding calculations provided in Appendix H. For the residence at 24648 Via Valmonte, calculations indicate higher levels of acoustical shielding, but 12 dB was used as a conservative measure.

Ventilation System

Depending upon the final design of the proposed parking structure, ventilation fans may be necessary. All mechanical equipment would be internal to the garage and would be completely enclosed and sound attenuated. Exterior noise from ventilation system equipment, if needed, would be negligible and less than significant.

Combined Noise Levels, Mechanical Equipment and On-Site Activities.

The combined noise from on-site activities and mechanical equipment noise (summarized in Table 5.10-16, *Summary of Average Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA Leq)*), would range from approximately 41 to 45 dBA L_{eq}. The highest combined operational noise levels (45.3 dBA L_{eq}) would occur at the nearest residence to the project site, at 24648 Via Valmonte. As shown in Table 5.10-16, the project would not result in an exceedance of the City of Torrance daytime (7 am to 10 pm) noise standard. As described above, the rooftop deck would be conditioned to be closed at 10 pm, and therefore the applicable Region 3 Nighttime Standard of 45 dBA L_{eq} would not be exceeded as all rooftop deck activity would cease during designated nighttime hours. Combined noise levels would be less than significant.

Table 5.10-16 Summary of Average Noise Levels from Parking Structure at Adjacent Off-Site Residences (dBA Leq)

Receiver Description	Parking Structure Noise (dBA Leq)	Pool Deck Noise (dBA Leq)	HVAC Noise (dBA Leq)	Combined Parking Structure, Pool Deck and HVAC Noise (dBA Leq)	Applicable Region 3 Daytime Standard (50 dBA Leq) Exceeded?
Nearest Residential P/L (24648 Via Valmonte)	28.1	39.8	43.8	45.3	No
2nd Nearest Residential P/L (24660 Via Valmonte)	29.8	34.6	40.0	41.4	No
3rd nearest Residential P/L (24704 Via Valmonte	30.4	41.3	37.7	43.1	No
4th nearest Residential P/L (24706 Via Valmonte	35.6	41.3	35.4	43.1	No

Source: Appendix H.

Combined On-Site Operational Noise and Existing Ambient Noise

As previously shown in Table 5.10-16, the combined noise from on-site activities and mechanical equipment noise would range from approximately 41 to 45 dBA L_{eq}. The highest combined operational noise levels (45.3 dBA L_{eq}) would occur at the nearest residence to the project site, at 24648 Via Valmonte (Table 5.10-17, *Combined On-Site Noise Levels and Existing Ambient Noise Levels (dBA Leq)*). An ambient noise measurement was conducted at this location, and the dominant noise source was traffic from Hawthorne Boulevard. The measured ambient noise level was 60.5 dBA L_{eq}. Combining this noise level with the operational noise results in an increase of approximately 0.1 dB (i.e., 60.6 dBA L_{eq}). In the context of community noise, this is not an audible change and would not be a substantial increase. Therefore, the permanent noise increase would be less than significant.

Table 5.10-17 Combined On-Site Noise Levels and Existing Ambient Noise Levels (dBA Leq)

Receiver Description	Combined Parking Structure, Pool Deck and HVAC Noise (from Table 5.10-16)	Existing Measured Noise Level (from Table 5.10-5)	Combined On-Site Noise Level Plus Existing Noise Level
Nearest Residential P/L (24648 Via Valmonte)	45.3	60.5	60.6

Source: Appendix H.

Substantial Temporarily or Periodic Increase in Ambient Noise

As discussed under Impact 5.10-1, noise levels from construction activities would generate temporary noise levels ranging from approximately 55 dBA to 73 dBA L_{eq}; noise levels on an L_{10} basis are estimated to range from approximately 58 dBA to 76 dBA L_{10}; and noise levels on an L_{max} basis are estimated to range from approximately 59 dBA to 74 dBA L_{max}. The measured ambient noise levels at the nearest noise-sensitive receiver (ST4) were 60.5 dBA L_{eq}, 63.0 dBA L_{10} and 74.5 dBA L_{max}. Without mitigation, this is considered a substantial increase.

Impact 5.10-3: The project would not create temporary or permanent groundborne vibration and groundborne noise that result in human annoyance. [Threshold N-2]

The project has the potential to result in significant levels of groundborne vibration during construction. Groundborne vibration from construction activities is typically attenuated over short distances. The heavier pieces of construction equipment used at this site could include bulldozers, graders, loaded trucks, water trucks, and pavers. Based on published vibration data, the anticipated construction equipment would generate an RMS vibration level of approximately 87 VdB re 1 micro-inch/second at a distance of 25 feet from the source (FTA 2006). The closest existing residences' property lines are approximately 77 feet or more from the construction area. At this distance and with the anticipated construction equipment, the RMS vibration levels would be approximately 72.3 VdB. This would be less than the recommended threshold of 80 VdB for human response within residential structures. Vibration from construction equipment may be perceptible at times, but the amount of time would be relatively brief as the construction equipment moves around the site. Furthermore, the majority of the construction work would take place well away from the nearest existing residences, and the vibration would be temporary. Therefore, the potential impact from groundborne vibration during construction would be less than significant.

Following construction, the proposed project would not have a potential to create significant levels of groundborne vibration because of the nature of the project (i.e., a multi-family residential development). Operational vibration would be negligible and less than significant.

With regard to potential for structural damage, the vibration levels are presented in terms of inches per second PPV. Based on published vibration data, the anticipated construction equipment would generate vibration levels of approximately 0.089 inches per second PPV at a distance of 25 feet from the source (FTA 2006). At the nearest existing residences, located 77 or more feet away from the nearest heavy construction work, the resultant PPV would be approximately 0.017 inch/second. This level would be less than the recommended threshold of

0.20 inches per second for potential of architectural damage to normal houses with plastered walls and ceilings. Construction vibration impacts would be less than significant.

Impact 5.10-4: The proximity of the project site to an airport would not result in exposure of future residents to airport-related noise. [Threshold N-3]

The project site is located approximately 0.5 mile from Torrance Municipal Airport (Zamperini Field). Based upon the City's General Plan Noise Element, the project site is located approximately 2,200 feet southwest of the airport's 60 dBA CNEL noise contour, and thus noise from aircraft operations would be well below 60 dBA CNEL (Torrance 2010). Additionally, the proposed project is outside of the airport's Planning Boundary/Airport Influence Area (Los Angeles County 2003). The project would not result in people residing or working in the project area being exposed to excessive noise levels from aircraft. This impact would be less than significant. No private airstrips exist in the project vicinity. Therefore, there would be no impact associated with noise from aircraft utilizing a private airstrip.

5.10.4 Cumulative Impacts

Construction Noise and Vibration

Noise from construction of the proposed project and related projects would be localized, thereby potentially affecting areas immediately within 500 feet from the construction site. The nearest existing sensitive/residential uses to the project site that would be subject to cumulative noise impacts are the residential uses located northwest of the project site, as well as the residential and commercial uses located across the street to the east and south of the Project site.

Of the 19 "related projects" contemplated by the Traffic Impact Study (see Appendix J to this DEIR), only one is close enough to the project site to create cumulative impacts when combined with the proposed project. The related project is a proposed 3-story Mixed-Use development that would be located on the northwestern corner of Via Valmonte and Hawthorne Boulevard. At this time, the development application is currently under review, and no project schedule has been established. Since the timing of the construction activities for this related project cannot be defined and is beyond the control of the City, any quantitative analysis that assumes multiple, concurrent construction projects would be entirely speculative.

Thus, even with proposed mitigation measures, if nearby related projects were to be constructed concurrently with the proposed project, significant cumulative construction noise impacts could result. However, those noise levels would be intermittent, temporary and would cease at the end of the construction phase, and would comply with time restrictions and other relevant provisions in the City's noise ordinances. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual project and compliance with the City's noise ordinances. As such, based on the relative distance of potential construction activities in conjunction with proposed project-related construction noise, cumulative construction noise impacts would be less than significant.

Mobile-Source Noise

The cumulative traffic noise levels would not increase by a noticeable amount (+3 dB) along the roadways analyzed. Therefore, significant cumulative increases in traffic noise levels would not occur, and impacts would be less than cumulatively considerable.

Stationary-Source Noise

Unlike transportation noise sources, whose effects can extend well beyond the limits of the project site, stationary-source noise generated by the project is limited to noise impacts to noise-sensitive receptors in relatively close proximity to the project site. Cumulative noise levels from the combined noise from on-site activities and mechanical equipment noise would range from approximately 41 to 45 dBA L_{eq}. Consequently, operational noise associated with cumulative residential projects would not be cumulatively considerable and would not result in a significant cumulative noise impact.

5.10.5 Existing Regulations and Standard Conditions

- Municipal Code
  - Chapter 6: Noise Regulation, Article 2. Section 46.2.6 Machinery, Equipment, Fans and Air Conditioning.
  - Chapter 6, Article 3, Section 46.3.1. Construction of Buildings and Projects
  - Chapter 6, Article 7, Section 46.7.1. General Noise Regulations.
  - Chapter 6, Article 7, Section 46.7.2. Noise Limits

- City of Torrance General Plan Noise Element
  - Policy N.1.1
  - Policy N.1.4
  - Policy N.2.3
  - Policy N.3.1

5.10.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.10-3 and 5.10.4.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.10-1 Construction activities would result in a significant temporary noise increases in the vicinity of the proposed project.

- Impact 5.10-2 Unmitigated interior noise level within the habitable rooms of residences adjacent to Hawthorn Boulevard could exceed the 45 dB L_{dn} or CNEL noise criterion.

5.10.7 Mitigation Measures

Impact 5.10-1

NO-1 The following measures shall be incorporated into the project contract specification to reduce construction noise impacts to a level below significance:

1 Prior to commencement of construction activities involving heavy equipment, temporary construction noise barriers shall be constructed in the locations shown in Figure 5.10-1, *Temporary Construction Noise Barriers*, of this DEIR. The noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack).

2 Ensure that all noise-producing project equipment and vehicles using internal combustion engines are equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that are in good operating condition and meet or exceed that original factory specification. Ensure that mobile or fixed "package" equipment (e.g., arc-welders, air compressors) are equipped with shrouds and noise control features that are readily available for that type of equipment.

3 Through contract specification the applicant and/or his contractors, shall ensure that all mobile or fixed noise-producing equipment used on the Project that are regulated for noise output by a local, state, or federal agency complies with such regulation while in the course of Project activity.

4 Implement construction noise reduction methods such as shutting off idling equipment and maximizing the distance between construction equipment staging areas and adjacent residences where feasible.

5 Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

6 Establish and enforce construction site and access road speed limits of 15 miles per hour during the construction period.

7 Ensure that the use of noise-producing signals, including horns, whistles, alarms, and bells, be for safety warning purposes only.

8 Ensure that project-related public address or music systems are not audible at any adjacent receptor.

9 The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner will be established prior

to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.

Impact 5.10-2

NO-2 To comply with the City and State's 45 dBA Ldn/CNEL interior noise standard, the dwelling units so designated in Table 5.10-11 (in **bolded** numbers) and depicted in Figure 7of the Noise Analysis Technical Report for the Solana Torrance Project will most likely require mechanical ventilation system or air conditioning system and possibly sound-rated windows. Prior to issuance of building permits, an interior noise analysis shall be required for those dwelling units identified in Table 5.10-11. Additionally, an interior noise analysis shall be required for residential units that are adjacent to elevators and other mechanical equipment, to ensure compliance with the City and state's 45 dBA Ldn/CNEL interior noise standard.

5.10.8 Level of Significance After Mitigation

Impact 5.10-1

With implementation of MM NO-1, the construction noise level would be reduced to 65 dBA or less, as shown in Table 5.10-18, *Construction Noise Model Results Summary with Mitigation*, and Figure 5.10-1, *Temporary Construction Noise Barriers*, below. The construction noise levels would not exceed the City of Torrance threshold of significance for construction noise and would not represent a substantial noise increase above levels existing without the project. Noise impacts would be less than significant with mitigation incorporated.

Table 5.10-18 Construction Noise Model Results Summary with Mitigation

Residence	Construction Phase	Construction Noise at Receiver Distances (dBA)				
		Nearest or Typical Construction Work Location Distance (feet)	Leq	L10	Lmax	75 dBA Significance Threshold Exceeded?
24660 Via Valmonte	Grading	Nearest Construction Work (177')	56	59	56	No
		Typical Construction Work (410')	53	56	52	No
	Paving	Nearest Construction Work (177')	55	58	55	No
		Typical Construction Work (410')	52	55	52	No
	Building Construction - Parking Garage	Nearest Construction Work (200')	55	58	57	No
		Typical Construction Work (307')	56	59	58	No
	Building Construction - Residential	Nearest Construction Work (200')	51	54	55	No
		Typical Construction Work (307')	49	52	52	No
24704 Via Valmonte	Grading	Nearest Construction Work (135')	61	64	60	No
		Typical Construction Work (370')	54	57	53	No
	Paving	Nearest Construction Work (135')	59	62	59	No
		Typical Construction Work (370')	53	56	53	No
	Building Construction - Parking Garage	Nearest Construction Work (240)	55	58	58	No
		Typical Construction Work (315')	55	58	58	No

Table 5.10-18 Construction Noise Model Results Summary with Mitigation

Residence	Construction Phase	Construction Noise at Receiver Distances (dBA)				
		Nearest or Typical Construction Work Location Distance (feet)	Leq	L10	Lmax	75 dBA Significance Threshold Exceeded?
24706 Via Valmonte	Building Construction - Residential	Nearest Construction Work (240)	52	55	55	No
		Typical Construction Work (315')	50	53	53	No
	Grading	Nearest Construction Work (187')	58	61	57	No
		Typical Construction Work (450')	53	56	52	No
	Paving	Nearest Construction Work (187')	57	60	57	No
		Typical Construction Work (450')	51	54	51	No
	Building Construction - Parking Garage	Nearest Construction Work (347')	52	55	55	No
		Typical Construction Work (425')	53	56	55	No
	Building Construction - Residential	Nearest Construction Work (347')	48	51	52	No
		Typical Construction Work (425')	48	51	52	No

Source: Appendix H.

Impact 5.10-2

With implementation of MM NO-2, the project's interior habitable spaces (living rooms, sleeping rooms, etc.) would have noise levels that would be in verified compliance with City and state 45 dBA Ldn/CNEL interior noise standard. Noise impacts would be less than significant with mitigation incorporated.

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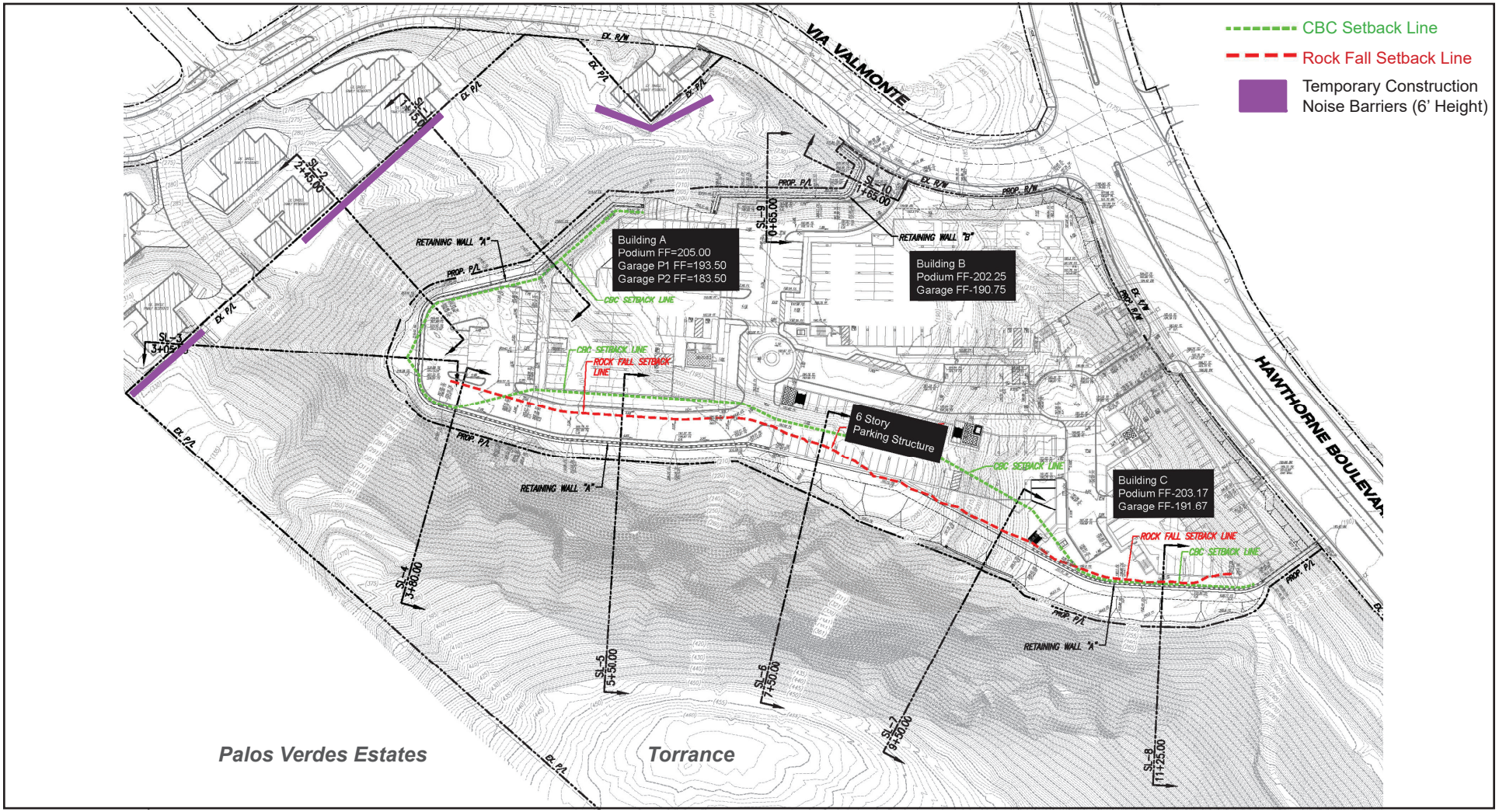
Figure 5.10-1 - Temporary Construction Noise Barriers

5. Environmental Analysis



Source: Dudek, 2019

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5.10.9 References

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5.11 PUBLIC SERVICES

This section addresses the proposed project's impacts to public services providing fire protection and emergency services, police protection, school services, and library services. The analysis in this section is based in part on the service provider letter responses in Appendix I of this DEIR. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.14, *Utilities and Service Systems*.

Fifty-seven comments relating to public services were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential impacts relating to increased need for police and fire service, and potential impacts on the area's schools. The potential impacts of the development on these resources have been analyzed in this section.

5.11.1 Fire Protection and Emergency Services

The information in this Section is based partly on a written questionnaire response by William Samp, Assistant Chief/Fire Marshal, Torrance Fire Department in August 2017. A copy of this response is in Appendix I, *Public Services and Utility Provider Correspondence*, of this DEIR. This section addresses fire protection pertaining to the proposed project. Fire protection and fire risks regarding wildland fires are addressed in Section 5.7, *Hazards and Hazardous Materials*, of this DEIR.

5.11.1.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

International Fire Code

The International Fire Code (IFC) regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The IFC includes general and specialized technical fire and life safety regulations addressing fire department access; fire hydrants; automatic sprinkler systems; fire alarm systems; fire and explosion hazards safety, use and storage of hazardous materials; protection of emergency responders; industrial processes; and many other topics.

State

California Fire Code

The California Fire Code (California Code of Regulations, Title 24, Part 9) is based on the 2015 IFC and includes amendments from the State of California fully integrated into the code. The California Fire Code contains fire safety–related building standards that are referenced in other parts of Title 24 of the California Code of Regulations.

California Health and Safety Code

Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Local

City of Torrance General Plan

The City of Torrance is committed to maintaining a safe environment by minimizing fire hazards to existing and new residential developments. The following policies to minimize the risks associated with urban fires and wildland fires are relevant to the proposed Project:

- Policy S.2.1 Continue to enforce building fire codes and ordinances.
- Policy S.2.2 Continue to enforce the City's fire prevention and suppression requirements for water supply, water flows, fire equipment access, and vegetation clearance in new and modified developments.
- Policy S.2.3 Continue to research and adopt best practices pertaining to fire management and fire hazards.
- Policy S.2.4 Continue to involve the Fire Department in the development review process to ensure that fire safety is addressed in new and modified developments.

City of Torrance Municipal Code

The City of Torrance Municipal Code identifies land use categories, development standards, and other general provisions that ensure consistency between the City's General Plan and proposed development projects. The following provisions from the City's Municipal Code focus on fire services impacts associated with new development projects and are relevant to the proposed Project:

- **Chapter 29.5 (Fire Facilities Impact Fees)**. This Chapter of the Municipal Code sets forth the fees that are imposed on residential and nonresidential development to ensure that new development pays its fair share of the costs required to support needed fire facilities and related costs necessary to accommodate such development. The funds are to be utilized for payment of the actual or estimated costs of fire facilities, apparatus, and equipment related to new residential and nonresidential construction.
- **Chapter 85.1 (Fire Code)**. The Torrance City Council has adopted and incorporated by reference, as though set forth in full in this Section of the Municipal Code, the 2016 Edition of the California Fire Code (CFC). The CFC sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials.

Existing Conditions

Fire protection and emergency medical services in the City of Torrance are provided by the Torrance Fire Department (TFD) from six fire stations and one Fire Prevention and Hazardous Administration office. TFD also participates in a mutual aid agreement as required by the California Emergency Management Agency (Cal

EMA). Torrance would receive fire suppression support from the following cities and/or county departments: Redondo Beach, Hermosa Beach, Manhattan Beach, El Segundo, Los Angeles County Fire, Los Angeles City Fire, or any other southern California departments as the incident needs dictate. A computer aided dispatch system is employed to send the closest available unit to an incident.

TFD provides safety, environmental protection, and property conservation through the provision of the following response programs: Emergency Medical Services, Direction and Control, Fire Suppression, Hazardous Material Emergency Services, Hazardous Materials Administration, Public Education, Specialized Emergency Response Services, Technical Rescue Services, and Fire Prevention.

Fire Stations, Staffing, and Equipment

The two Torrance fire stations closest to the proposed project Site are Station No. 2 at 25135 Robinson Way, approximately 0.7 mile east of the site and Station No. 4 at 5205 Calle Mayor, approximately 1.4 miles northwest of the site (TFD 2017). These two TFD stations would likely serve the Site given their proximate locations. Additional to these engine companies, the closest truck company is stationed at Station No. 6 at 21401 Del Amo Circle, approximately 2.4 miles north of the Site.

Between all TFD stations there are 146 safety personnel. In total, the TFD has seven fire engines, two ladder trucks, and five paramedic rescue units. Each engine has a captain, an engineer and two firefighters, each rescue has two paramedics, and each truck has a captain, an engineer and either one or two firefighters. Per day, the TFD is staffed with 27 firefighters, nine engineers, nine captains, and one platoon commander, totaling 46 staff on duty (TFD 2017). Figure 5.11-1, *Fire and Police Department Locations*, shows the locations of all TFD stations. As shown in Table 5.11-1, *Torrance Fire Department*, the existing equipment among these fire stations are sufficient to address fire at any location in the proposed structures.

Table 5.11-1 Torrance Fire Department

Station	Location	Equipment	Daily Staffing
Station No. 2	25135 Robinson Way	Engine (E92) Company, Paramedic Assessment	4: Captain, Engineer, firefighter, firefighter/paramedic
Station No. 4	5205 Calle Mayor	Engine (E94) Company, Paramedic Rescue (R94)	6: Captain, Engineer, firefighter, firefighter/paramedic, 2 paramedics
Station No. 6	21401 Del Amo Circle	Engine (E96) Company, Ladder Truck Company (T96), Paramedic Rescue (R96)	9: 2 captains; 2 engineers; 2 firefighters; 1 firefighter/paramedic; 2 paramedics

Source: Torrance Fire Department 2017

The City of Torrance recently adopted a two-year 2017-2019 budget with no immediate or near future plans for expansion of the Fire Department. The longer-range plan is to increase EMS services by equipping and staffing a rescue at Station 2; a Paramedic Rescue unit is staffed with two paramedics. This plan would round out EMS coverage in the City by having a dedicated Advanced Life Safety unit assigned to each Fire Station.

Calls for Service and Response Times

The U.S. Census Bureau Quick Facts estimates as of July 1, 2016 the City's population is 147,195 resulting in a personnel-to-population ration of 0.99 firefighters per 1000 population. Currently, the request for service for TFD for a population of 1,000 is 0.102 requests for service per person (Samp 2017). The day time population is significantly greater than the residential population, reported to be over 200,000 people.[1] TFD responds to over 12,000 incidents a year. Approximately 70% of the responses are medical and rescue emergency calls. Fires represent less than 3% of all calls, and structure fires represent less than 0.5%. This is due to the use of modern fire and building codes, effective fire prevention inspection work by TFD, and effective public education. Fires, when they do occur in newer occupancies, are kept small by fire sprinkler systems and the efforts of TFD (Torrance 2010).

The projected drive time upon receiving a request for service is slightly under six minutes, depending upon traffic conditions. Non-emergency drive time is approximately six minutes. The Torrance Fire Department acceptable standard response time target for on-scene arrival is six minutes for 95% of the requests for services. The proposed project area falls approximately halfway between Station 2 and Station 4.

Emergency Access

The site plan verifies that there will be gurney access on site at each building. Fire department ladder access will occur primarily at the southern area of the site with limited access near Building B. There are five fire hydrants proposed to be available onsite. They are at the following locations:

- Southwest portion of the site towards Building A
- Northern portion of the site between Building A and Building B
- Central portion of the site between Building B and Building D
- Southeastern portion of the site between Building C and Hawthorne Boulevard
- Southern portion of the site between Building C and Building D

Five-minute fire department access is accessible at three major portions of the site including: northwestern portion of the site around Building A, along Via Valmonte towards Hawthorne Boulevard on the edge of Building B, and Hawthorne Boulevard towards the southern portion of the site along Building C.

Fire service with FM meter and Double Check Valve Assembly (DCVA) are proposed 10 feet above ground at the entrance of the site towards Via Valmonte.

As shown in Figure 3-8, *Parking Structure (Building D) Elevations,* the project site would be accessed by one driveway entrance on Hawthorne Boulevard (right-in/right-out only) and one driveway on Via Valmonte (right-out only). Emergency vehicles would be able to enter the driveway on Via Valmonte through the raised traffic movement barriers. Per City of Torrance Roadway widths, turning radii, and turn-around dimensions would be designed to accommodate truck movements and fire equipment. The proposed roads and driveways would

[1] There were 103,328 jobs in Torrance in 2015. See US Census Bureau. 2019. Longitudinal Employer-Household Dynamics: OnTheMap. https://onthemap.ces.census.gov/.

provide emergency access to all proposed buildings, conforming to CFC Section 503, as incorporated into the City's Municipal Code Section 85.2.060.

Funding

The City collects development impact fees (DIF) for fire facilities from all new residential and nonresidential development per City Municipal Code Section 29.5.2. The DIF for residential multi-family projects is currently $2,427.13per unit and is applied to pay a portion of the costs identified for public facilities used for transportation services, undergrounding of utilities, sewer and storm drain improvements, and Police and Fire facilities. Additionally, the fire department is authorized to collect fees for permits and other services, including the review of plans and new business inspections.

TFD operations are funded mostly from the City's General Fund, which consists mostly of revenues from sales taxes, property taxes, and utility users' taxes (Torrance 2017).

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Figure 5.11-1 - Fire and Police Department Locations

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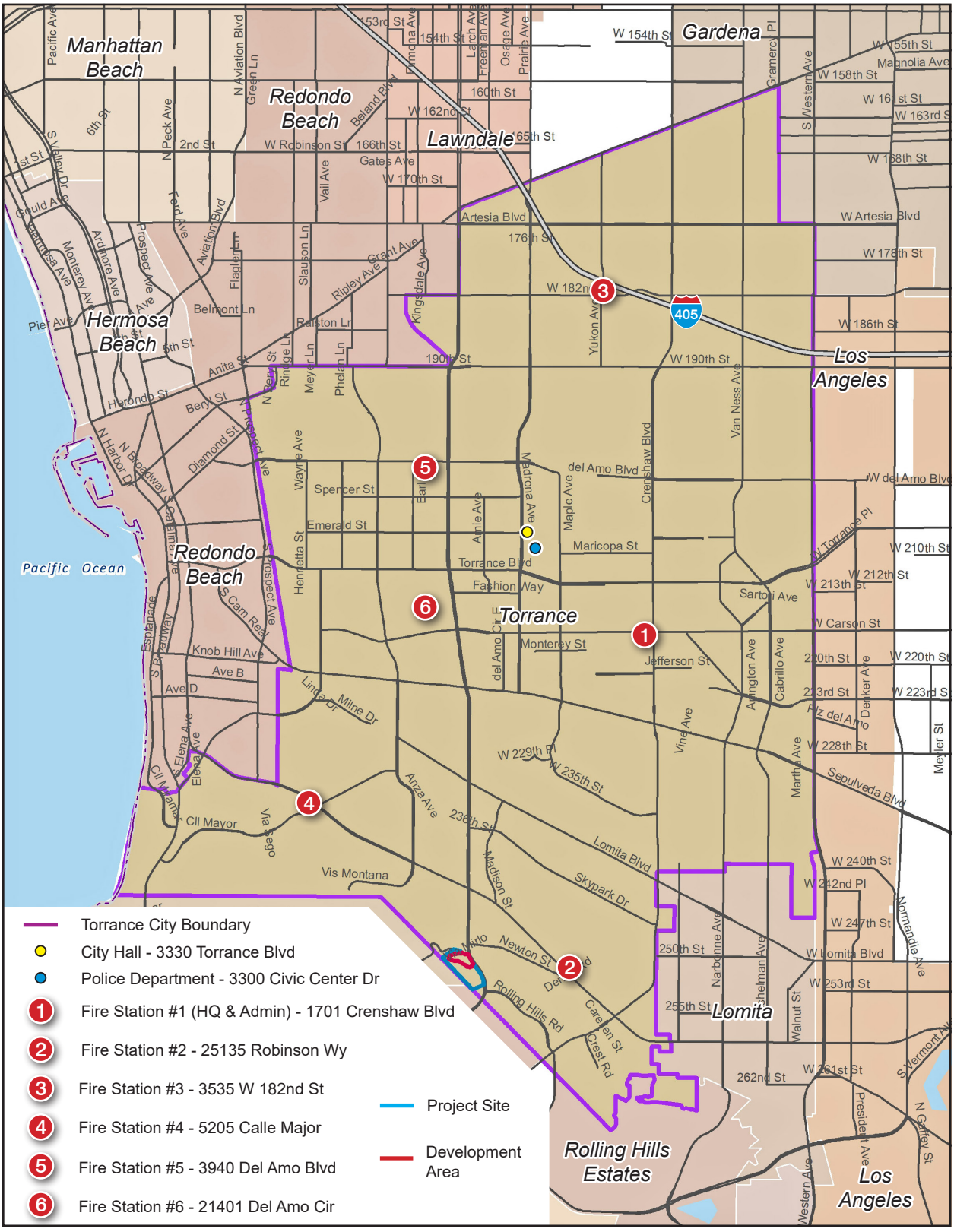

Note: Unincorporated county areas are shown in white.

Source: ESRI, 2017

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5.11.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[2]

FP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, 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 fire protection services.

5.11.1.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-1: The proposed project would introduce new structures and residents into the TFD service boundaries, thereby increasing the requirement for fire protection facilities and personnel. [Threshold FP-1]

Impact Analysis: Population in the project area would increase by approximately 722 residents.

With the current request for service for TFD for a population of 1,000 being 0.102 requests for service per person, TFD would expect 74 requests for service from the project area (Samp 2017). This would be based on average requests for service per person citywide and could be higher or lower based on demographics of purchasers of property onsite (TFD 2017).

The City of Torrance staffs six Fire Stations and participates with regional and State mutual aid agreements. Station 2 and Station 4 primarily cover the south end of the City. The closest Truck Company (3 Person – Captain, Engineer, FF) is stationed at Station 6, 21401 Del Amo Circle. Ideally, Station 2 or Station 4 units will respond to the project area. (Samp 2017). If units from Station 6 were required, it appears that service to the proposed project would be manageable.

The increase in potential services needed would not require the significant expansion or construction of a new fire station.

Impacts would be less than significant.

5.11.1.4 CUMULATIVE IMPACTS

The City of Torrance is the area over which cumulative impacts to the Torrance Fire Department are considered. Substantial additional development is anticipated in the City. Growth estimates for the City from

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

the Southern California Association of Governments (SCAG) are shown in Table 5.11-2, *Growth Forecast for City of Torrance*. Between 2012 and 2040, the City's population is forecast to increase about 9 percent, and employment in the City is forecast to increase about 13 percent.

Table 5.11-2 Growth Forecast for City of Torrance

	2012	2040	Increase 2012-2040	Percent Increase, 2012-2040
Population	146,500	159,800	13,300	9.1%
Employment	102,300	117,600	15,300	13.0%

Source: SCAG 2012

TFD anticipates future demands to increase in the next five years due to the increasing age of Torrance's population, the increase of senior housing units, and the general increase of population. Additional development in the city would generate increased demand for fire suppression, EMS and other TFD services, including fire prevention and community education. TFD will meet this demand with accreditation, self-assessment, standard of cover, and implementing a strategic plan, as well as with the addition of a rescue unit at Station 2; TFD will then have an Advanced Life Safety unit at each fire station (Samp 2017).

As with the proposed project, other developments in the City listed in Table 4-1, *Related Projects*, would be required to pay development impact fees to finance public facilities including fire stations and firefighting equipment which would ultimately help to lessen impacts and provide more resources to efficiently serve the area. However, payment of fees and the effect on public facilities including fire stations would happen with or without project implementation. Development of the project is not expected to cumulatively increase impacts on service ability. In addition, the TFD as well as the City will review each additional project to ensure consistency with service levels and General Plan policies. This impact is not cumulatively considerable.

5.11.1.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

- National Fire Protection Association 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments
- California Building Code (California Code of Regulations, Tile 24, Part 2)
- California Fire Code (CFC; California Code of Regulation, Title 24, Part 9).
- City of Torrance Municipal Code, Division 8, Building and Safety, Chapter 5, Fire Prevention

5.11.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of existing regulations and standard conditions, Impact 5.11-1 would be less than significant.

5.11.1.7 MITIGATION MEASURES

No mitigation is needed.

5.11.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.11.2 Police Protection

The information in this Section is based partly on a written questionnaire response from Kent Sentinella, Administrative Analyst, Torrance Police Department, dated May 22, 2017; a copy of this response is included in Appendix I, *Public Service and Utility Provider Correspondence*, of this DEIR.

5.11.2.1 ENVIRONMENTAL SETTING

Police Services

Law enforcement services in the City of Torrance are provided by the Torrance Police Department (TPD). TPD is at 3300 Civic Center Drive, behind City Hall. The department is composed of four bureaus: Administrative, Services, Patrol, and Special Operations. The largest bureau is the Patrol Bureau, which includes Crime Scene Investigation, Gang Detail, Shopping Center Detail, Special Weapons and Tactics (S.W.A.T.), and Canine Detail unit. The department's Community Affairs Division comprises the Community Affairs Section and the Community Lead Officer Detail, which acts as a liaison with the community. The Community Affairs Section coordinates programs such as Neighborhood Watch, Map Your Neighborhood, Business Watch, Partners in Policing, and Teens and Policing. They also perform and coordinate functions such as home security inspections, vacation security checks, speaker requests, and tours of the police department. To further the effectiveness of its public safety efforts, the TPD has established focus-based policing, with the aim of empowering area and division commanders to manage unexpected challenges and provide solutions, and to delegate power to line level officers.

Staffing and Response Times

TPD is budgeted for 227 sworn officers and 128.8 non-sworn employees. As of May 2017, there were vacancies for over 22 sworn officers and 15 non-sworn employees. There are five areas of responsibility or beats in the City of Torrance, each managed by a designated patrol area commander. The proposed project site is located within the South Beat, which encompasses the southwest part of the City west of Hawthorne Boulevard and south of Sepulveda Boulevard.

The current average response time for priority one calls Citywide between January 1, 2017 and May 18, 2017 was 7 minutes and 26 seconds. Per TPD, this is an acceptable response time.

Funding for Improvements

The City collects development impact fees (DIF) for police facilities from all new residential and nonresidential development per City Municipal Code Section 29.6.1.

5.11.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[3]

PP-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, 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 police protection services.

5.11.2.3 ENVIRONMENTAL IMPACTS

Impact 5.11-2: The proposed project would introduce new structures and residents into the Torrance Police Department service boundaries, thereby increasing the requirement for police protection facilities and personnel. [Threshold PP-1]

Impact Analysis: Implementation of the proposed project would increase the number of residents and structures in the TPD service area by 722. Although the proposed project could increase the need for police services due to the population influx, it would not result in a significant increase in demand for police services or facilities. TPD's ability to deliver police services in a timely manner would not be significantly impacted.

Currently, there are no plans for expansion of police facilities and TPD has indicated that the proposed development would not have a significant impact on police services. TPD has no plans for immediate or near-future expansion of its facilities, staff or equipment inventory, and no specialized policing programs are currently active in the vicinity of the project site. TPD has an acceptable level of equipment maintained. With continued access to vehicles, appropriate means of entry to secured areas of property, and with proper signage, TPD does not foresee the proposed project negatively impacting current service levels (Sentinella 2017).

The proposed development is required to pay police facilities impact fees and property taxes, and project tenants would contribute increased sales taxes and utility users' taxes to the City. Impact fees and a portion of the other revenues would be allocated for police facilities and operations, reducing impacts. Impacts would be less than significant.

5.11.2.4 CUMULATIVE IMPACTS

As shown in Table 5.11-2, the City's population is forecast to increase about 9 percent, and the number of jobs in the City is forecast to increase about 13 percent, between 2012 and 2040. This could increase the demand for police protection services within the TPD service area. The City evaluates each project, and the demands made on the police department, as part of budget deliberations and will adjust as necessary to meet future demand. If additional facilities are needed in the future, the City has the ability to adjust the DIF to include the

[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

requisite buildings. Per the Municipal Code all new development projects would pay police facilities impact fees that would be used for any future facilities. There are no plans for a new fire station and there is not a demand for one with or without the project. The need for an additional facility is not contingent on the development of the project and if necessary, would occur regardless of project implementation. Because no new facilities are needed now, and any future growth is responsible for impacts through the DIF, cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.11.2.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

City of Torrance Municipal Code Sections 29.6.1 et seq: Police Facilities Impact Fees.

5.11.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.11-2 would be less than significant.

5.11.2.7 MITIGATION MEASURES

No mitigation measures were identified. Impacts to police services are less than significant.

5.11.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts on police services are less than significant and do not require mitigation measures. No significant unavoidable adverse impacts would exist related to police protection.

5.11.3 School Services

The information in this Section is based partly on a written questionnaire response by Jorge Gutierrez, Director of Facilities and Operations, Torrance Unified School District, dated June 29, 2017; a copy of this response is included in Appendix I of this DEIR.

5.11.3.1 ENVIRONMENTAL SETTING

Existing Conditions

Torrance Unified School District

The project site is in the Torrance Unified School District (TUSD). The district encompasses all of the City of Torrance, and operates 17 elementary schools, 8 middle schools, 5 high schools (one of which is a continuation school), 3 adult education centers, and a child development center. Districtwide enrollment in the 2017-2018 school year was 23,496 (CDE 2019).

Schools Serving the Project Site

The proposed project site is within the attendance boundaries for Riviera Elementary School, Richardson Middle School, and South High School. Although Walteria Elementary School is outside the school's attendance

boundaries, it is in the vicinity of the project site and therefore is included in Table 5.11-3, *TUSD Schools Serving the Project Site,* which shows specific enrollment and capacity.

Table 5.11-3 TUSD Schools Serving the Project Site

School, (Grade Levels) Address	Enrollment 2016-2017	Capacity[1]		
		Permanent classrooms [students]	Relocatable classrooms [students]	Total [students]
Elementary Schools				
Riviera Elementary School (K-5) 365 Paseo de Arena, Torrance	654	30 [690]	5 [115]	35 [805]
Walteria Elementary School (K-5) 24456 Madison Street, Torrance (project site is outside attendance boundary)	684	27 [621]	9 [207]	36 [828]
Middle Schools				
Richardson Middle School (6-8) 23751 Nancy Lee Lane, Torrance	692	23 [690]	9 [270]	32 [960]
High Schools				
South High School (9-12) 4801 Pacific Coast Highway, Torrance	2,084	95 [2,660]	6 [168]	101 [2,828]

1 Capacities per classroom are: 20, grades K-3
30, grades 4-5
30, middle school (grades 6-8)
28, high school (grades 9-12)
The capacity per classroom for elementary schools used here is 23, pro-rated for grades K-5 from the K-3 and 4-5 capacities
Source: Dolinka Group. 2016, March 9.
Residential School Fee Justification Study, Torrance Unified School District.
Source: TUSD 2017

Regulatory Background

Senate Bill 50 (SB 50) was enacted in 1998 to address how schools are financed and how development projects may be assessed for associated school impacts. It has been incorporated into California law as Government Code Section 65995. SB 50 establishes a process for determining the amount of fees developers may be charged to mitigate the impact of development on school facilities resulting from increased enrollment; it also allows the state to offer funding to school districts to acquire school sites, construct new school facilities, and modernize existing school facilities. SB 50 provides three ways to determine funding levels for school districts. TUSD falls under the default level (Level 1) fee structure, which allows it to levy development fees to support school construction necessitated by development and receive a 50 percent match from state bond money. Based on the current fee structure, for residential developments, construction can be assessed a maximum fee of $3.36 per square foot and commercial/industrial a fee of $0.54 per square foot. According to Section 65996 of the California Government Code, development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

5.11.3.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[4]

SS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, 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 school services.

5.11.3.3 ENVIRONMENTAL IMPACTS

Impact 5.11-3: The proposed project would generate approximately 45 new students who would impact the school district enrollment capacities area schools. [Threshold SS-1]

Impact Analysis: The City of Torrance is served by the TUSD schools and several private schools. The proposed project assumes a buildout of 248 multifamily units. Based on the student generation factors shown in Table 5.11-4, *Student Generation Factors and Estimated Student Population*, the project buildout is anticipated to yield approximately 45 K-12 students. (25 elementary, 10 middle school, and 10 high school students) The proposed project is within the District's attendance boundaries.

TUSD has no plans for new or expanded schools serving the project site aside from already planned school improvements (Jorge Gutierrez 2017). Modernization improvements and program growth are currently in effect at each of the schools that would absorb the students created by the proposed project. Specifically, Riviera Elementary School is adding a music building and science classrooms building in response to program needs. Richardson Middle School has added brand new state-of-the-art science labs along with a new gymnasium, complete with basketball courts and boy's and girls' locker rooms. South High School is planning to construct a new auditorium within the next two years and is in the process of developing a new aquatic center adjacent to Torrance Elementary School. These projects are at various stages of planning and approval processes. These projects are underway by the District, and are not linked to, or required by, the proposed project. Therefore, impacts related to school services would be less than significant.

Table 5.11-4 Student Generation Factors and Estimated Student Population

School Level	Student Generation Factors for Multifamily Attached Units	Total Student Generation
Elementary	0.10	25
Middle School	0.04	10
High School	0.04	10
Total	0.18	**45**

Source: Gutierrez 2017

[4] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

5.11.3.4 CUMULATIVE IMPACTS

Cumulative impacts to school services would occur when the proposed project, in combination with other recent, current, and proposed residential projects in the area (See Table 4-1, *Related Projects*), causes a substantial increase in the student population that would trigger the need for the construction of new school facilities. The number of households in the City of Torrance is forecast to increase from 56,100 in 2012 to 62,000 in 2040, an increase of 5,900. Detached single-family residential units in Torrance are estimated to generate about 0.4204 students each (Dolinka Group 2016).[5] Thus, the forecast growth in Torrance is estimated to generate about 2,480 students. Each new project would be required to pay development impact fees pursuant to SB 50 to help fund additional classroom capacity, payment of which is considered full mitigation for impacts to public school facilities. Therefore, cumulative impacts throughout the TUSD would be less than significant and project impacts would not be cumulatively considerable.

5.11.3.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

- Senate Bill 50 (Government Code Section 65995)

5.11.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.11-3.

5.11.3.7 MITIGATION MEASURES

No mitigation measures are needed.

5.11.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant and no significant unavoidable adverse impacts relating to school services have been identified.

5.11.4 Library Services

5.11.4.1 ENVIRONMENTAL SETTING

Torrance Public Library (TPL), part of the City's Community Services Department, serves the City. TPL has six branches: the main library and 5 branches. Current library resources include over 400,000 volumes, approximately 35,000 audio visual materials (music, CD's, books on CD and cassette), approximately 27,700 video materials (DVD's and video cassettes), and over 900 periodical subscriptions. TPL also offers a variety of electronic print services and databases that may be accessed at branch libraries or from home.

Figure 5.11-2, *Torrance Public Library Facilities*, shows the locations of the six facilities that comprise TPL, which are listed below.

[5] The student generation factor for detached single-family units is used here for all housing units, as the mix of future housing unit types is unknown.

- Katy Geissert Civic Center Library, 3301 Torrance Boulevard
- El Retiro Branch Library 126 Vista del Parque (Redondo Beach mailing address)
- Henderson Branch Library, 4805 Emerald Street
- North Torrance Branch Library, 3604 West Artesia Boulevard
- Southeast Branch Library, 23115 South Arlington Avenue
- Walteria Branch Library, 3815 West 242nd Street

Residents may also obtain materials through interlibrary loan and they have access to the University of California Library System, the County of Los Angeles Library System, the California State Library System Catalogs, and several neighboring cities library systems on the TPL web site.

The TPL is funded largely through the City's General Fund. TPL does not receive developer impact fees for funding the expansion and operation of library services but gains revenue through charging residents fines and fees for library services and from grant programs funded by the California State Library (Public Library Fund and Transaction Based Reimbursement Programs). This latter source has provided less revenue recently as state budgets have been reduced. TPL earns some additional revenue by selling donated books.

The library branch that would serve the project site is Walteria Library approximately 0.5 mile north of the project Site. Branch hours are Monday through Thursday 11 a.m. to 8 p.m. and Saturday through Sunday 10 a.m. to 5 p.m. Library staff have indicated that this branch does not currently have sufficient facilities to meet local demand for library services, and that there are no plans to build new branches or renovate existing ones in the near future.

5.11.4.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[6]

LS-1 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, 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 library services.

[6] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

5.11.4.3 ENVIRONMENTAL IMPACTS

Impact 5.11-4: The proposed project would generate additional population of approximately 722 residents, increasing the service needs for the local libraries, specifically the Walteria Library Branch. [Threshold LS-1]

Impact Analysis: The proposed apartments would house about 722 residents, thus increasing demands for TPL services and facilities.[7] TPL does not have a standard for determining the amount of library space (in square feet) that is needed per resident. Planning for library services in Torrance is guided by the city manager and the Department of Community Services director, and carried out by library staff. When approved, the City incorporates library service needs and projects into the City budget. The services of the library are increasingly in demand as population increases, especially for electronic media and Internet access for students and the general public. The owner of the proposed apartments would pay additional property taxes, and the tenants would contribute additional sales and utility users' taxes to the City of Torrance. Part of the resulting increase in City General Fund revenues would be allocated for TPL services. Impacts would be less than significant.

It is possible that the proposed project would increase demand on library services beyond projected levels and would depend on the library service needs of residents of the proposed project. The continued accrual of service fees and fines from residents and potential funding from the California Public Library would bring revenue to TPL. The City has shown commitment to continue pursuing the funding for the North Torrance Library, as indicated in the proposed General Plan. Implementation of the General Plan update would not create any significant impacts to library services.

The need for these services represents a less than significant impact on TPL.

5.11.4.4 CUMULATIVE IMPACTS

Cumulative impacts to library services would occur when the proposed project, in combination with other recent, current, and proposed residential projects in the area, (See Table 4-1, *Related Projects*) cause a substantial increase in the demand for library services, creating a need to construct new facilities resulting in substantial environmental impacts.

Demands for library services are generated by the population in the library's service area. The City's population is forecast to increase by about 13,300 between 2012 and 2040 (see Table 5.11-2 above). Thus, demands for library services in the City would increase during that period. Other projects would generate increases in property, sales, and utility users' taxes for the City. Library use by residents of those projects would generate additional fees and fines for library services. Plans for future expansion are far out and if expansion were to occur, it would occur with or without this project, and this project would only contribute a small percentage of

[7] Estimated occupancy is based on two residents per bedroom, per the Hydraulic Network Analysis for the proposed project (KHR 2017), and is a conservative estimate. Using the estimated average household size in Torrance in 2017, 2.62 persons (CDF 2017), full occupancy is estimated at 650 residents.

population growth. Cumulative impacts would be less than significant after increased City revenues generated by such projects, and project impacts would not be cumulatively considerable.

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Figure 5.11-2 - Torrance Public Library Facilities

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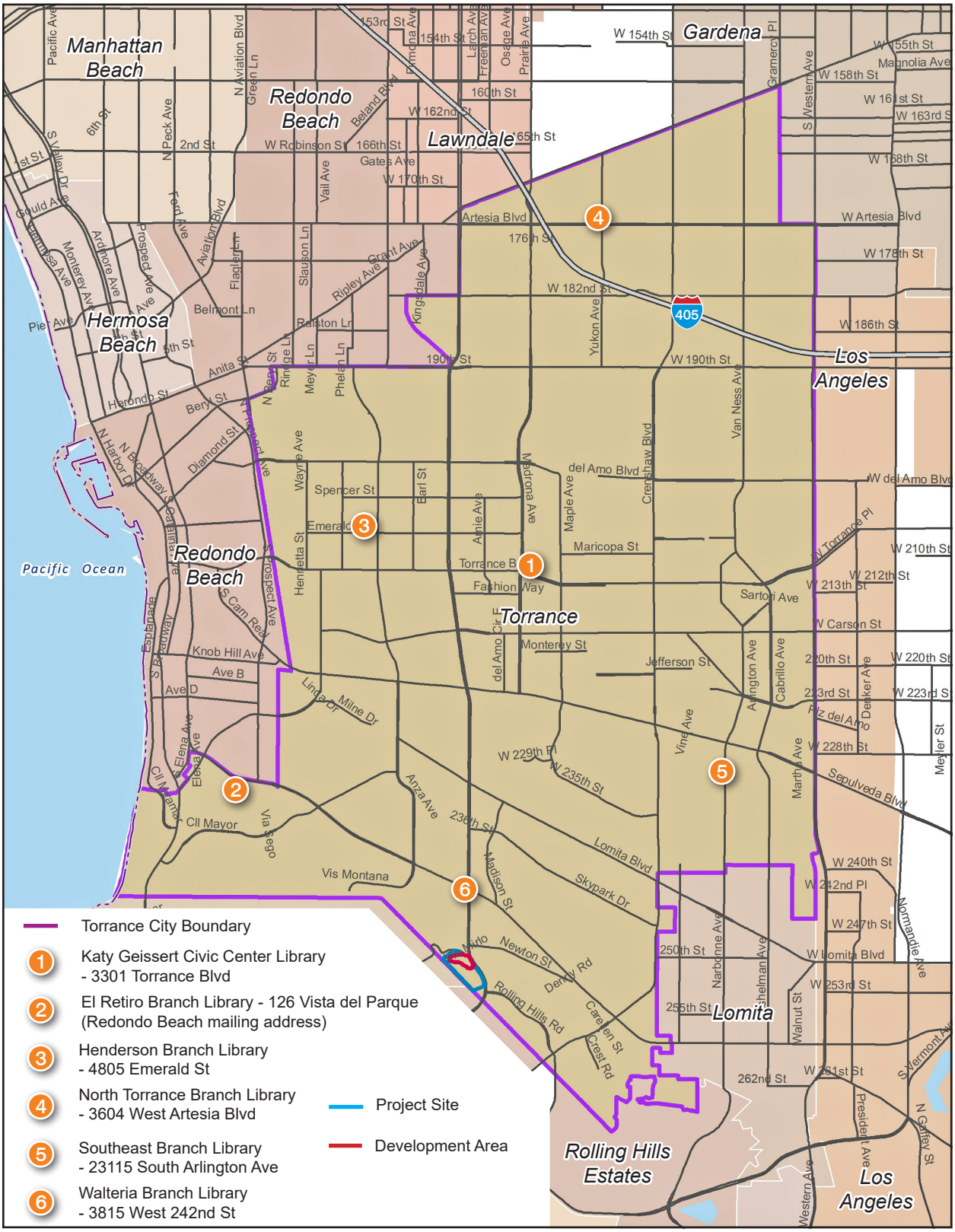

Note: Unincorporated county areas are shown in white.

Source: ESRI, 2017

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5.11.4.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

There are no existing regulations for library operations.

5.11.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.11-4 would be less than significant.

5.11.4.7 MITIGATION MEASURES

No mitigation is required.

5.11.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant; therefore, no significant unavoidable adverse impacts relating to library services remain.

5.11.5 References

California Department of Education (CDE). 2019, January 21. 2017-18 Enrollment by Ethnicity and Grade Torrance Unified Report. https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=1965060&agglevel=district&year=2017-18.

California Department of Finance (CDF). 2018, May. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011- 2018. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2018InternetVersion.xls.

City of Torrance. 2017, May 16. Proposed 2017-2019 Budget. https://www.torranceca.gov/home/showdocument?id=16464.

Dolinka Group. 2016, March 9. Residential School Fee Justification Study, Torrance Unified School District.

5. Environmental Analysis
PUBLIC SERVICES

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5.12 TRANSPORTATION

This section of the DEIR evaluates the potential for implementation of the Solana Residential Development Project to result in transportation and traffic impacts in the City of Torrance and the communities surrounding the proposed project site. The traffic impact analysis evaluates the baseline and future operating conditions at eighteen (18) baseline intersections and two (2) baseline roadway segments within the project vicinity as well as future operating conditions for two (2) project driveways.

It also estimates the trip generation potential of the proposed project and superimposes the project-related traffic volumes on the circulation system as it currently exists. In addition, the analysis forecasts cumulative (near-term) operating conditions, based both on approved and reasonably foreseeable future projects and growth projections conditions, and where necessary, identifies appropriate intersection improvements/mitigation measures. The analysis in this section is based in part on the following technical report(s):

Traffic Impact Study, Solana Torrance, Torrance, California. KHR Associates, February 28, 2019.

A complete copy of this study is in the technical appendices to this DEIR (Appendix J).

One hundred-fifty-eight comments relating to transportation and traffic were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project. The concerns were related to the increase in traffic from the proposed project on arterial and local roadways, potential roadway hazards from the project's driveways along Hawthorne Boulevard and Via Valmonte, and construction related traffic impacts. The potential impacts of the proposed project's construction and operational traffic have been analyzed in this section.

Bicycle facilities, sidewalks, and public transit are addressed in the Initial Study (Appendix A to this DEIR) and are not addressed below.

5.12.1 Environmental Setting

5.12.1.1 BASELINE ROADWAY NETWORK

The baseline roadway network is described below. Study area intersections and roadways are mapped on Figure 5.12-1, *Traffic Study Area.*

Regional Access

Regional access to the project site is provided via the Pacific Coast Highway (SR-1), San Diego Freeway (I-405) and the Harbor (I-110) Freeway. The Pacific Coast Highway, located north of the project site, is a major state highway running along most of the Pacific coastline of California and is a designated Major Arterial within the City of Torrance. The I-405 Freeway, located north of the project site, is a major highway that extends throughout Orange and Los Angeles County and runs in a northwest-southeast orientation through the City of Torrance. The I-110 Freeway, located east of the project site, is a major highway in Los Angeles County that runs in a north-south direction, connecting San Pedro and the Port of Los Angeles with Downtown Los Angeles and Pasadena.

Local Street Network

The principal local network of streets serving the project site are Via Valmonte and Hawthorne Boulevard. The following discussion provides a brief description of these key area streets.

Hawthorne Boulevard: (SR-107) runs in a primarily north to south direction from Century Boulevard to Palos Verdes Drive, respectively. Hawthorne Boulevard is classified as a Principal Arterial and is generally an eight-lane divided roadway with a raised median. Adjacent to the project site, Hawthorne Boulevard is six lanes, divided. SR-107 extends from SR-1 north to the I-405 Freeway in the City of Lawndale. North of the Pacific Coast Highway, SR-107 is under the jurisdiction of Caltrans.

Via Valmonte is a Collector street providing access to the residential neighborhood adjacent to the development site. Trending in an east to west direction, terminating at Hawthorne Boulevard to the east and Paseo Del Campo to the west, Via Valmonte consists of two lanes, undivided.

Pacific Coast Highway (SR-1) is a major state highway running along most of the Pacific coastline of California. Within the City of Torrance, Pacific Coast Highway is designated a Major Arterial, tending in an east-west direction with six lanes, divided. Throughout the City, SR-1 is under the jurisdiction of Caltrans.

Rolling Hills Road is a four-lane undivided roadway

244th Street is a two-lane local street

Newton Street is a two-lane local street

Via Valmonte is a two-lane local street

Whiffle Tree Lane is a two-lane local street

Fallenleaf Drive is a two-lane local street

Crenshaw Boulevard between SR-1 and Rolling Hills Road is a six-lane divided arterial roadway

Anza Avenue is a four-lane divided roadway

Vista Montana is four lanes with a two-way median turn lane

Palos Verdes Drive North is a two-lane divided roadway in most of the study area

Calle Mayor is two lanes with a two-way median turn lane west of SR-1, and four lanes with a median turn lane east of SR-1.

Madison Street south of SR-1 is a two-lane local street.

Study Roadway Segments

The TIS also analyzed the operation on two roadway segments: Hawthorne Boulevard south of Via Valmonte; and Via Valmonte west of Hawthorne Boulevard.

Study Intersections

Key study intersections are described below in Table 5.12-1, *Baseline Intersections*, were selected based on the location in relation to the vicinity of the project and whether potential significant project-related traffic would pass through such intersections.

Table 5.12-1 Baseline Intersections

Intersection	Jurisdiction	Traffic Control
Hawthorne Blvd/Pacific Coast Hwy	Caltrans	Signalized
Hawthorne Blvd/244th Street	Torrance	Signalized
Hawthorne Blvd/Newton Street	Torrance	Signalized
Hawthorne Blvd/Via Valmonte	Torrance	Signalized
Hawthorne Blvd/Rolling Hills Road	Torrance	Signalized
Whiffletree Lane/Rolling Hills Road	Torrance	Signalized
Fallenleaf Drive/Rolling Hills Road	Torrance	Signalized
Crenshaw Blvd/Rolling Hills Road	Torrance	Signalized
Crenshaw Blvd/Pacific Coast Hwy	Caltrans	Signalized
Anza Avenue/Vista Montana & Pacific Coast Hwy	Caltrans	Signalized
Via Valmonte & Palos Verdes Dr. N	Palos Verdes Estates	All-Way Stop
Hawthorne Blvd/Palos Verdes Dr. N	Rolling Hills Estates	Signalized
Crenshaw Blvd/Palos Verdes Dr. N	Rolling Hills Estates	Signalized
Rolling Hills Rd/Palos Verdes Dr. N	Rolling Hills Estates/Rolling Hills	Signalized
Newton Street & Calle Mayor	Torrance	Cross-Street Stop
Vista Montana & Newton Street	Torrance	All-Way Stop
Madison Street & Newton Street	Torrance	All-Way Stop
Pacific Coast Hwy/Calle Mayor	Caltrans	Signalized

Source: KHR 2019

5.12.1.2 BASELINE TRAFFIC CONDITIONS

Baseline (2017) traffic conditions at fourteen intersections were modeled based on traffic counts taken in 2016 and adding a one percent annual ambient growth factor for one year. The A.M. and P.M. peak-period intersection turning movement counts were collected by National Data Surveying and Services (NDS) in the month of April 2016 on a Wednesday. Additionally, four intersections were added to the traffic study in 2017 and traffic counts at those intersections were taken in 2017.

Intersection Level of Service (LOS) Methodology

In conformance with the City of Torrance requirements, baseline A.M. and P.M. peak hour operating conditions for the key study intersections were evaluated using the Intersection Capacity Utilization (ICU) Methodology and Highway Capacity Manual (HCM) Methodology. Each method yields a Level of Service (LOS), which is a qualitative measure of traffic conditions with a six-point scale ranging from level of service (LOS) "A", indicating free-flowing traffic with no delays, to LOS "F", indicating severe congestion with long delays. The ICU methodology describes the LOS of signalized intersections based on a Volume-to-Capacity Ratio (V/C Ratio). The six qualitative categories of LOS for signalized intersections using the ICU method, defined by the City of Torrance, are shown in Table 5.12-2, *LOS Criteria for Signalized Intersections (ICU Methodology)*.

Table 5.12-2 LOS Criteria for Signalized Intersections (ICU Methodology)

LOS	Volume to Capacity Ratio	Definitions
A	≤0.60	**Excellent operation.** All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	>0.60≤0.70	**Very good operation.** Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.
C	>0.70≤0.80	**Good operation.** Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	>0.80≤0.90	**Fair operation.** There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.
E	>0.90≤1.00	**Poor operation.** Some long-standing vehicular queues develop on critical approaches.
F	>1.00	**Forced flow.** Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes. Potential for stop-and-go-type traffic flow.

Source: KHR 2019

HCM methodology is used to determine the operating LOS at an intersection based on stopped delays experienced by drivers at signalized and unsignalized intersections (Torrance 2010). The LOS criteria for unsignalized and signalized intersection using the HCM method is shown in Table 5.12-3, *LOS Criteria for Signalized Intersections (HCM Methodology)*. Caltrans evaluates intersection impacts using the HCM method and four of the eighteen studied intersections that are located along Pacific Coast Highway are under the jurisdiction of Caltrans.

Table 5.12-3 LOS Criteria for Unsignalized and Signalized Intersections (HCM Methodology)

Level of Service (LOS)	Intersection Delay (in Seconds)	
	Unsignalized Intersection	Signalized Intersection
A	≤10.0	≤10.0
B	>10.0≤15.0	>10.0≤20.0
C	>15.0≤25.0	>20.0≤35.0
D	>25.0≤35.0	>35.0≤55.0
E	>35.0≤50.0	>55.0≤80.0
F	>50.0	>80.0

Source: KHR 2019

Baseline Intersection Level of Service

In order to effectively estimate future traffic conditions at the project completion, an ambient growth factor was included in the evaluations per the recommendation of the City of Torrance. Volumes recorded in 2016 for study roadways and intersections were increased by one percent of Annual Growth to estimate current 2017 conditions.

ICU Method of Analysis

Table 5.12-4, *Baseline (2017) Intersection Level of Service (ICU Method of Analysis)* summarizes the baseline peak hour service level calculations for the baseline key signalized study intersections based on ICU method of

analysis. As shown, most intersections operate within acceptable levels of LOS "D" or better during both A.M. and P.M. peak commute hours on a "typical" weekday with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "E" in the A.M. peak hour
- Rolling Hills Rd/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "E" in the A.M. / LOS "F" in the P.M. peak hour

Table 5.12-4 Baseline (2017) Intersection Level of Service (ICU Method of Analysis)

Intersection/Segment	A.M. Peak Hour		P.M. Peak Hour	
	V/C Ratio	LOS[1]	V/C Ratio	LOS[1]
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]	0.878	D	0.870	D
Hawthorne Blvd/244th Street[B]	0.504	A	0.521	A
Hawthorne Blvd/Newton Street[B]	0.627	B	0.773	C
Hawthorne Blvd/Via Valmonte[B]	0.576	A	0.633	B
Hawthorne Blvd/Rolling Hills Road[B]	0.658	B	0.606	B
Whiffletree Lane/Rolling Hills Road[B]	0.393	A	0.399	A
Fallenleaf Drive/Rolling Hills Road[B]	0.318	A	0.288	A
Crenshaw Blvd/Rolling Hills Road[B]	0.780	C	0.840	D
Crenshaw Blvd/Pacific Coast Hwy[A]	0.882	D	0.980	**E**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]	0.779	C	0.843	D
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.764	C	0.709	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.939	**E**	0.884	D
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.398	**F**	1.401	**F**
Pacific Coast Hwy/Calle Mayor[A]	0.974	**E**	1.028	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
[1] LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

HCM Method of Analysis

Table 5.12-5, *Baseline (2017) Intersection Level of Service (HCM Method of Analysis)* summarizes the baseline peak hour service level calculations for the key study intersections based on HCM method of analysis. As shown, the key intersections currently operate at an acceptable LOS during both A.M. and P.M. peak commute hours of a "typical" weekday with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road. — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Anza Avenue/Vista Montana/Pacific Coast Hwy — LOS "E" in the A.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Rolling Hills Rd/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "F" in both A.M. and P.M. peak hours

Table 5.12-5 Baseline (2017) Intersection Level of Service (HCM Method of Analysis)

Intersection/Segment	AM Peak Hour		PM Peak Hour	
	Delay	LOS1	Delay	LOS1
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]	50.3	D	67.2	**E**
Hawthorne Blvd/244th Street[B]	21.8	C	21.9	C
Hawthorne Blvd/Newton Street[B]	10.9	B	12.6	B
Hawthorne Blvd/Via Valmonte[B]	11.6	B	15.0	B
Hawthorne Blvd/Rolling Hills Road[B]	17.5	B	13.7	B
Whiffletree Lane/Rolling Hills Road[B]	5.4	A	4.2	A
Fallenleaf Drive/Rolling Hills Road[B]	6.3	A	4.9	A
Crenshaw Blvd/Rolling Hills Road[B]	67.3	**E**	46.2	D
Crenshaw Blvd/Pacific Coast Hwy[A]	48.5	D	59.7	**E**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]	72.3	**E**	44.8	D
Via Valmonte & Palos Verdes Dr, N[C]	29.7	D	26.7	D
Hawthorne Blvd/Palos Verdes Dr. N[D]	55.3	**E**	31.2	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	103.5	**F**	104.1	**F**
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	292.0	**F**	257.2	**F**
Newton Street & Calle Mayor[B]	14.0	B	11.8	B
Vista Montana & Newton Street[B]	15.0	C	11.1	B
Madison Street & Newton Street[B]	8.7	A	9.2	A
Pacific Coast Hwy/Calle Mayor[A]	112.1	**F**	179.9	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
[1] LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

Baseline Roadway Daily Traffic Volumes

The daily traffic volume on the segment of Hawthorne Boulevard south of Via Valmonte in 2017 was 36,253 with a LOS of B; while the volume on Via Valmonte west of Hawthorne Boulevard was 6,437 with a LOS of A. Both of the study roadway segments currently operate at an acceptable level of service.

Figure 5.12-1 - Traffic Study Area
5. Environmental Analysis

ID	Roadway Segments
A	Hawthorne Boulevard south of Via Valmonte
B	Via Valmonte west of Hawthorne Boulevard
No.	**Intersection**
1	Hawthorne Boulevard & Pacific Coast Highway
2	Hawthorne Boulevard & 244th Street
3	Hawthorne Boulevard & Newton Street
4	Hawthorne Boulevard & Via Valmonte
5	Hawthorne Boulevard & Rolling Hills Road
6	Rolling Hills Road & Whiffle Tree Lane
7	Rolling Hills Road & Fallenleaf Drive
8	Crenshaw Boulevard & Rolling Hills Road
9	Crenshaw Boulevard & Pacific Coast Highway
10	Anza Avenue/Vista Montana & Pacific Coast Highway
11	Via Valmonte & Palos Verdes Drive North
12	Hawthorne Boulevard & Palos Verdes Drive North
13	Crenshaw Boulevard & Palos Verdes Drive North
14	Rolling Hills Road & Palos Verdes Drive North
15	Newton Street & Calle Mayor
16	Vista Montana & Newton Street
17	Madison Street & Newton Street
18	Pacific Coast Highway & Calle Mayor

Source: KHR, 2018

5. Environmental Analysis
TRANSPORTATION

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5.12.1.3 REGULATORY FRAMEWORK

The regulatory framework discusses the regulatory agencies/policies that affect transportation in the City of Torrance and the project study area. Major policy documents impacting the transportation system in the City of Torrance include laws at the state level and planning documents at a regional level.

State

Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act (SB 375) was signed into law on September 30, 2008. The SB 375 regulation provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal behind SB 375 is to reduce automobile commuting trips and length of automobile trips, thus helping to meet the statewide targets for reducing greenhouse gas (GHG) emissions set by the California Global Warming Solutions Act of 2006 (AB 32). SB 375 requires each metropolitan planning organization to add a broader vision for growth, called a "sustainable communities strategy" (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land use, and housing policies to plan for achievement of the regional emissions target.

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law. The legislature found that with the adoption of SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas emissions, as required by AB 32.

SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes will include the elimination of auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as the basis for determining whether a project will have a significant impact on the environment in many parts of California (if not statewide). As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code § 21099[b][1]). On December 2018, the Governor's Office of Planning and Research released updates to the CEQA guidelines for the implementation of SB743. While the updated CEQA Guidelines went into effect in December 2018, the update provides agencies with an opt-in period until July 1, 2020 to adopt the new VMT-based criteria under the updated CEQA Guidelines. Due to the opt-in period, automobile delay based on level of service can still be utilized to determine the traffic impacts of a proposed project.

California Department of Transportation

The California Department of Transportation (Caltrans), plans and maintains the state routes, highways, and freeways in California. Caltrans is the owner/operator of Hawthorne Boulevard north of Pacific Coast Highway, as well as Pacific Coast Highway throughout the City, and has developed transportation impact analysis guidelines for use when assessing state facilities, "Guide for the Preparation of Traffic Impact Studies".

The intent of the guide is to provide a starting point and a consistent basis for how Caltrans evaluates federal, state, and local agency development projects and their potential traffic impacts to state highway facilities.

Regional

Southern California Association of Governments

In accordance with statutory requirements of SB 375, the Southern California Association of Governments adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to provide a regional transportation plan for six counties in Southern California: Orange, San Bernardino, Riverside, Los Angeles, Ventura, and Imperial. The primary goal of the regional transportation plan is to increase mobility for the region. With recent legislation, this plan also encompasses sustainability as a key principle in future development. Current and recent transportation plan goals generally focus on balanced transportation and land use planning that:

Maximize mobility and accessibility for all people and goods in the region.

Ensure travel safety and reliability for all people and goods in the region.

Preserve and ensure a sustainable regional transportation system.

Maximize the productivity of our transportation system.

Protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).

Encourage land use and growth patterns that facilitate transit and active transportation.

Los Angeles County General Plan Mobility Element

The Los Angeles County General Plan Mobility Element identifies the goals and policies related to circulation and mobility within the County. The Department of Public Works uses LOS to analyze the congestions of roadways in the transportation system. Generally, LOS "D" is the desired minimum level of service. However, it can be determined on a case by case basis. For instance, in order to further General Plan goals and policies such as to protect environmentally sensitive areas, promote active transportation, and encourage infill development, a LOS worse than "D" could be considered acceptable.

Congestion Management Program

Los Angeles County Metropolitan Transportation Authority (Metro) is required by state law to prepare and update the Congestion Management Program (CMP). In October 2010, Metro adopted the update CMP which is intended to address the impact of local growth on regional transportation system. When preparing for a project's EIR, local jurisdictions are responsible for assessing the impacts of new development on the CMP system to ensure that impacts to the route will be considered. As identified in the Plan, the acceptable LOS standard in the County is LOS "E", except when the base year LOS is worse than "E". In such cases, the base year LOS is the standard (Metro 2010). CMP highways that are located in the study area include the Pacific Coast Highway.

It should also be noted that on June 28, 2018, the Board of Directors of Metro approved initiating the process for Los Angeles County and all its local jurisdictions to opt out of the California Congestion Management Program, as authorized under the California Government Code Sections 65082 et seq. (Metro 2018). The City of Torrance has not opted out of the Congestion Management Program.

Local

City of Torrance Circulation and Infrastructure Element

The City of Torrance Circulation and Infrastructure Element, adopted on April 6, 2010, describes the goals and policies needed to attain circulation objectives and introduces other techniques that can be used to improve traffic flow. The City's target for intersection operation is a LOS "D" or better. The LOS "D" objective for the roadway system design reflects the City's desire to maintain stable traffic flow, realizing that peak-hour congestion may occur at locations near freeways or other locations with unusual traffic characteristics due to regional traffic flow. As discussed in the General Plan, policies pertaining to improving circulation are addressed in multiple chapters of the General Plan. Objectives and associated policies are presented below (Torrance 2010).

- **OBJECTIVE CI.3:** To maintain a Level of Service D or better at intersections within the City
  - **Policy CI-3.1:** Pursue trip reduction and transportation systems management measures to reduce and limit congestion at intersections and along streets throughout the City.
  - **Policy CI.3.2:** Monitor the capacity of critical intersections throughout the City.
  - **Policy CI.3.3:** Interconnect traffic signals and perform similar Intelligent Transportation System (ITS) improvements to maximize the smooth progression of traffic flows and to minimize delay and stop-and-go conditions.
  - **Policy CI.3.5:** Encourage site and building design that reduces automobile trips and parking space demand.
  - **Policy CI.3.6:** Implement the near-term and long-range recommended improvements set forth in this Element.
- **OBJECTIVE CI.4:** To provide a safe, efficient, and comprehensive circulation system that serves local needs, meets forecasted demands, and reduces traffic impacts on neighborhoods
  - **Policy CI-4.1:** Protect residential neighborhoods from cut-through traffic by enhancing the capacity of Arterials and Collectors, improving signage, guiding traffic away from residential areas, and employing appropriate traffic-calming methods based on identified needs.
  - **Policy CI.4.6:** Require the equitable sharing between the public and private sector of the full fair-share cost of improvements needed to mitigate traffic impacts.
  - **Policy CI.4.7:** Consider all alternatives for increasing street capacity before widening is pursued for streets that immediately serve residential neighborhoods.

5.12.2 Thresholds of Significance

In accordance with State CEQA Guidelines, the effects of a project are evaluated to determine whether they would result in a significant adverse impact on the environment. An EIR is required to focus on these effects

and offer mitigation measures to reduce or avoid any significant impacts. The criteria used to determine the significance of impacts may vary depending on the nature of the project. According to Appendix G of the State CEQA Guidelines Update approved in December 2018, the proposed project would have a significant impact related to transportation if it would:

T-1 Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

5.12.2.1 STANDARD OF SIGNIFICANCE THRESHOLD

The project study area includes intersections under the jurisdictions of the City of Torrance, Rolling Hills Estates, Palos Verdes Estates, and the California Department of Transportation (Caltrans). As discussed above, the ICU methodology is used for City of Torrance signalized intersections and the HCM methodology is used for unsignalized intersections and those under the jurisdiction of Caltrans. Under the ICU method of analysis, the City of Torrance defines a significant traffic impact as when project traffic increases volume/capacity by .02 or more and the resulting LOS is E or worse. Under the HCM analysis, neither the City of Torrance's regulation nor Caltrans's regulation provides a specific threshold of significance. However, under the City' General Plan, the City's target for intersection operation is a LOS "D" or better. Therefore, for purposes of this DEIR, the City considers impacts to be significant if a) a decrease in LOS occurs, changing the designation from acceptable (LOS >D) to unacceptable (LOS <E), or b) any decrease in LOS occurs if an intersection is already operating at unacceptable operating conditions.

The City of Rolling Hills Estates considers a significant impact as a change in LOS from C to D, or D to E, or a change in volume/capacity by .02 or more within LOS C or D, or a change of .01 within LOS E or F. This EIR utilizes the City of Rolling Hills Estates threshold for intersections under its jurisdiction.

The City of Palos Verdes Estates determines that a project's transportation impact at an intersection shall be deemed "significant" in accordance with the following:

- Existing LOS = C an increase equal or greater than 4.0 seconds
- Existing LOS = D an increase equal or greater than 3.0 seconds
- Existing LOS = E an increase equal or greater than 2.0 seconds
- Existing LOS = F an increase equal or greater than 2.0 seconds

This EIR utilizes the City of Palos Verdes Estate threshold for intersections under its jurisdiction.

For, the purposes of the this DEIR, the City considers impacts to roadway segments to be significant if a) a decrease in LOS occurs, changing the designation of any roadway segment that accesses the project site from

acceptable (LOS >D) to unacceptable (LOS <E), or b) any decrease in LOS occurs if a roadway is already operating at unacceptable operating conditions.

5.12.3 Environmental Impacts

5.12.3.1 METHODOLOGY

Project Trip Generation

Trip generation refers to the number of trip ends generated by a given development or land use over a specific time period, usually per day and during morning and late afternoon peak hours of traffic demand (typically 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.). For the proposed project, the land use code that applies to the project is 211 "Multifamily Housing (Mid-Rise)" which is defined in the Tenth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE), as buildings containing three to ten floors in a General Urban/Suburban setting. Table 5.12-6, *Project Trip Generation Rates and Forecast*, shows the project's forecasted daily and peak hour traffic volumes for a typical weekday. As shown, the proposed project is estimated to generate 1,349 daily trips: 89 trips in the A.M. peak hour, and 109 trips in the P.M. peak hour.

Table 5.12-6 Project Trip Generation Rates and Forecast

Land Use Code: Multi-Family Residential (221)						
Trip Generation Factors	Size (DU[1])	Trip Rate[2]	Inbound/ Outbound[2]	Inbound Trip Ends[3]	Outbound Trip Ends[3]	Total Trip Ends[3]
Average Daily Trips on Weekday	248	5.44/DU	50%/50%	674	675	1,349
Weekday A.M. Peak Hour of Adjacent Street Traffic	248	0.36/DU	26%/74%	23	66	89
Weekday P.M. Peak Hour of Adjacent Street Traffic	248	0.44/DU	61%/39%	66	43	109

Source: KHR 2019; *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).
1 DU=Dwelling Units
2 Trip Generation Rate & Percentage of Inbound/Outbound Trips Per *Trip Generation Manual*, 10th Ed., Institute of Transportation Engineers
3 All Trip Ends Rounded to Nearest Whole Unit.

Trip Distribution

In addition to trip generation, travel demand forecasting also includes trip distribution and trip assignment. Both were formulated with input from the City of Torrance Public Works Department, Traffic and Transportation Division. Trip distribution signifies by general direction (i.e., east, west, north, and south) the percentage of all traffic generated to and from a given project site based on travel routes taken by those residing, working and traveling within the regional proximity of the project site. The project trip distribution is shown on Figure 5.12-2, *Project Trip Distribution*. As shown, the majority of the trips (80 percent) are oriented toward the north, where the most employment centers, commercial businesses, and schools are located while the remaining 20 percent are oriented to the south along Hawthorne Boulevard where access exists to Crenshaw Boulevard, Palos Verdes Drive, and Western Avenue.

Trip Assignment

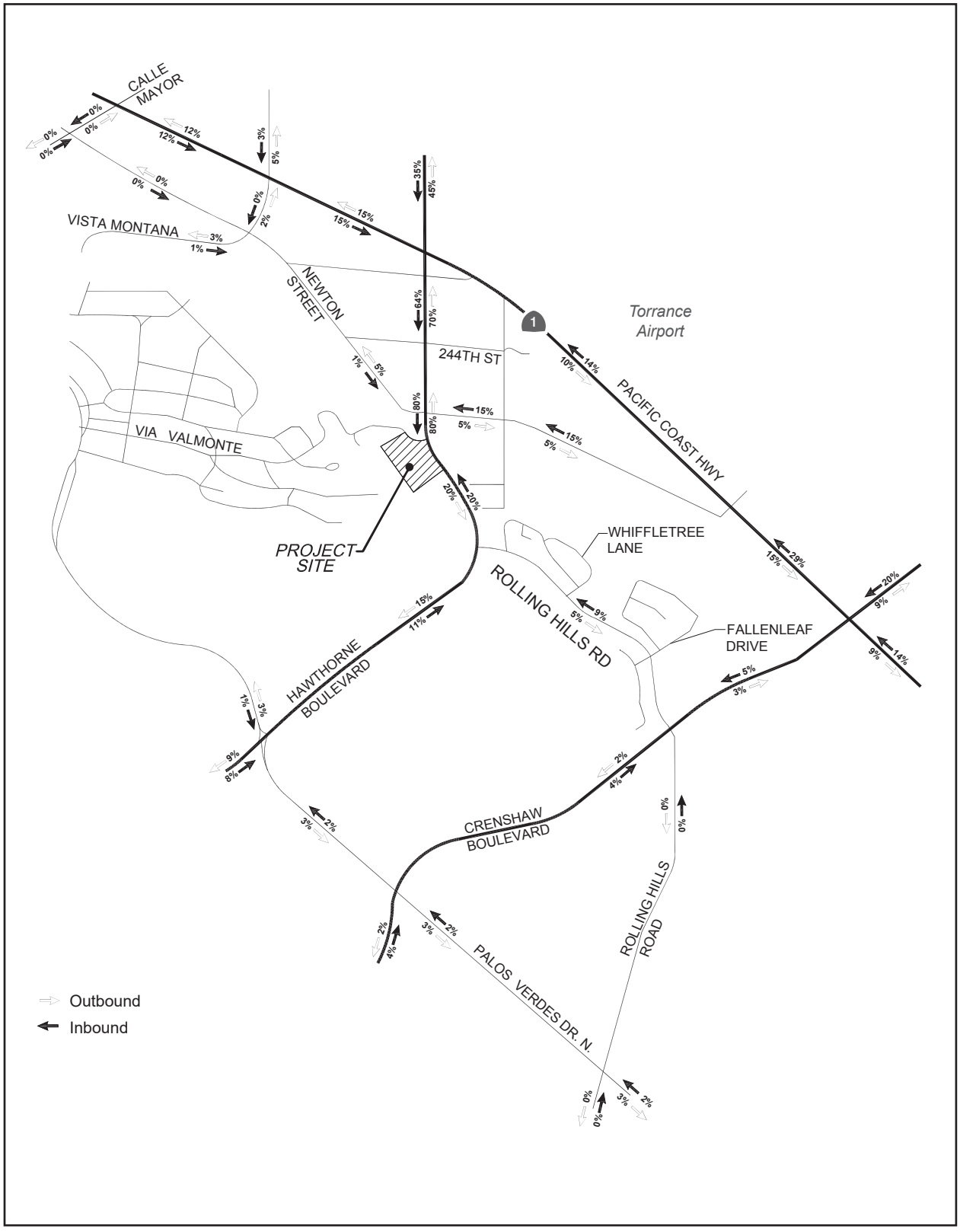
Trip assignment identifies the particular routes used by traffic generated to and from a given project site and is used to predict traffic patterns generated from a given project site. The project trip assignments were made based on the trip distribution described above as well as other physical and operational constraints which affect

the roadways and intersections, such as direction and time of day, roadway and intersection capacities, and intersection traffic controls. Details about the peak hour, project-only intersection turning movement volumes and daily traffic volumes on the two roadway segments can be found in the TIS included as Appendix J to this DEIR.

Proposed Site Access

Proposed site access was analyzed by reviewing the project site plan, the proposed off-site improvements, and other constraints and opportunities for access to the site. The proposed site access would be via two driveways. The main entrance would be accessed via a right-in-right-out only driveway from Hawthorne Boulevard, approximately 185 feet south of the intersection of Hawthorne Boulevard and Via Valmonte. The second exit-only driveway would be a right-turn only driveway along Via Valmonte, approximately 180 feet west of the same intersection. Raised traffic movement barriers would be installed at the Via Valmonte driveway to allow emergency vehicles to access the property from Via Valmonte. The two proposed driveways are shown on Figure 3-6, *Site Plan*, in Chapter 3 *(Project Description)* of this EIR.

Figure 5.12-2 - Project Trip Distribution
5. Environmental Analysis



Source: KHR, 2018

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Proposed Roadway Improvements

The proposed project includes the following proposed roadway improvements, as shown on Figure 3-12, *Proposed Roadway Improvements*:

- **On Via Valmonte**: Widening of the eastbound Via Valmonte approach to its intersection with Hawthorne Boulevard to provide an additional travel lane for optional left turn, through movement, or right turns. This improvement will include a new roadway surface, curb, gutter, sidewalk, and parkway on the south side of Via Valmonte, a new crosswalk across Via Valmonte at Hawthorne Boulevard, and new accessible ramps on the northwest and southwest corners of the intersection, as well as modifications to the traffic signal at the Via Valmonte/Hawthorne Boulevard intersection.

- **On Hawthorne Boulevard**: Widening and restriping a traffic lane to add a southbound right turn lane between Via Valmonte and the proposed driveway for vehicles to decelerate and enter the project site. This improvement will include a new sidewalk contiguous to the street curb, a landscaped parkway between the sidewalk and the project property line wall, and modifications to the traffic signal at the Via Valmonte/Hawthorne Boulevard intersection.

- **At the intersection of Hawthorne Boulevard and Via Valmonte**: "Splitting" the eastbound and westbound movements (designating the eastbound movement as the lead) and adding a left turn arrow to the eastbound approach on Via Valmonte. This will allow all eastbound vehicles (far greater in volume than the westbound) to clear first, followed by the westbound movement from the shopping center driveway.

Capital Improvements

The City is currently undertaking capital improvements to the intersection of Hawthorne Boulevard and Pacific Coast Highway, and the intersections of Pacific Coast Highway and Vista Montana Anza Avenue. These projects are summarized below:

- **Pacific Coast Highway/Hawthorne Boulevard**: This City project will increase the capacity of the intersection of Hawthorne Blvd and Pacific Coast Highway by providing three through lanes, dual left turn lanes, and dedicated right-turn lanes in all four directions. This intersection is owned and operated by the State of California Department of Transportation (Caltrans) requiring all work to comply with Caltrans standards and permit conditions. Right-of-way has been acquired from several properties adjacent to the project to make way for the enhancements. Relocation of utilities poles is also required and will be performed by Southern California Edison Company. Construction is anticipated in Fall 2019.

- **Pacific Coast Highway/Vista Montana Anza Avenue**: The City project is intended to upgrade the intersection by providing dual dedicated left-turn (LT) lanes from southbound Anza Avenue and northbound Vista Montana onto PCH. On Anza Avenue, just north of PCH, the southbound roadway will be reconfigured to convert 4 lanes [1 through (TH), 1 shared LT/TH, 1 LT, and 1 right-turn (RT)] to 5 lanes (2 TH, 2 LT, and 1 RT). On Vista Montana, just south of PCH, the west sidewalk will be narrowed, and the northbound roadway will be widened and reconfigured to convert 3 lanes (1 TH, 1 LT, and 1 shared RT/TH) to 4 lanes (1 TH, 2 LT, 1 shared RT/TH). By providing the additional designated left-turn lanes, it will improve intersection circulation. The project will also lengthen the northbound left-turn lanes to

accommodate additional vehicles. The proposed improvements will eliminate the back up of vehicles along the Anza Avenue and Vista Montana segments. In addition, it would allow better circulation of the local streets in the vicinity of the intersection. Construction is anticipated to begin Fall 2019.

Scenarios Analyzed

As part of the traffic impact study (Appendix J), the following scenarios were analyzed in addition to baseline conditions:

- **Baseline (2017) With-Project Traffic Conditions:** Estimated by adding project-generated traffic volumes to baseline traffic conditions.
- **Ambient (2019) Without-Project Traffic Conditions**: Estimated using baseline (2017) conditions and a one percent annual ambient growth factor for two years (2017 to 2019).
- **Ambient (2019) With-Project Traffic Conditions**: Estimated by adding project-generated traffic volumes to ambient (2019) without-project traffic volumes.
- **Cumulative (2019) Without-Project Traffic Conditions**: Estimated by adding traffic generation from the cumulative developments to ambient (2019) without-project traffic conditions
- **Cumulative (2019) With-Project Traffic Conditions**: Estimated by adding traffic generation from the cumulative developments to ambient (2019) with-project traffic conditions.

Baseline (2017) Without-Project Traffic Conditions are described above in Section 5.12.1.2, *Baseline Traffic Conditions*. Baseline levels of service for the study intersections are shown in Table 5.12-4 based on the ICU method of analysis, while the level of service based on the HCM method of analysis are shown in Table 5.12-5. The Ambient (2019) Without-Project Traffic Conditions and Cumulative (2019) Without-Project Traffic Conditions are presented below.

Ambient (2019) Without-Project Traffic Conditions

Intersection Capacity Analysis (ICU Method)

Table 5.12-7, *Ambient (2019) Without-Project Intersection Operation, ICU Method,* summarizes the ambient (2019) peak hour service level calculations for the studied signalized intersections using the ICU method. As shown, intersections operate at an acceptable LOS, with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N — LOS "E" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "E" in the A.M / LOS "F" in the P.M. peak hour

Table 5.12-7 Ambient (2019) Without-Project Intersection Operation, ICU Method

Intersection/Segment	A.M. Peak Hour		P.M. Peak Hour	
	V/ C Ratio	LOS[1]	V/C Ratio	LOS[1]
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]*	0.809	C	0.700	C
Hawthorne Blvd/244th Street[B]	0.512	A	0.529	A
Hawthorne Blvd/Newton Street[B]	0.638	B	0.786	C
Hawthorne Blvd/Via Valmonte[B]	0.586	A	0.643	B
Hawthorne Blvd/Rolling Hills Road[B]	0.670	B	0.617	B
Whiffletree Lane/Rolling Hills Road[B]	0.397	A	0.404	A
Fallenleaf Drive/Rolling Hills Road[B]	0.323	A	0.292	A
Crenshaw Blvd/Rolling Hills Road[B]	0.795	C	0.854	D
Crenshaw Blvd/Pacific Coast Hwy[A]	0.897	D	0.998	**E**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	0.794	C	0.858	C
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.778	C	0.721	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.956	**E**	0.900	**E**
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.424	**F**	1.429	**F**
Pacific Coast Hwy/Calle Mayor[A]	0.992	**E**	1.047	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
[1] LOS in **boldface** are unacceptable (LOS E or worse)
* includes planned capital improvement for that intersection
Source: KHR 2019

Intersection Capacity Analysis (HCM Method)

Table 5.12-8, *Ambient (2019) Without-Project Intersection Operation, HCM Method*, summarizes the ambient peak hour service level calculations for the studied signalized and stop controlled intersections using the HCM method. As shown, most intersections operate at an acceptable LOS, with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy LOS "E" in the P.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor LOS "F" in both A.M. and P.M. peak hours

Table 5.12-8 Ambient (2019) Without-Project Intersection Operation, HCM Method

Intersection/Segment	A.M. Peak Hour		P.M. Peak Hour	
	Delay[1]	LOS[2]	Delay[1]	LOS[2]
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]*	47.5*	D	64.4*	**E**
Hawthorne Blvd/244th Street[B]	24.1	C	24.1	C
Hawthorne Blvd/Newton Street[B]	11.0	B	12.9	B
Hawthorne Blvd/Via Valmonte[B]	11.9	B	10.7	B
Hawthorne Blvd/Rolling Hills Road[B]	18.5	B	13.6	B
Whiffletree Lane/Rolling Hills Road[B]	5.5	A	4.2	A
Fallenleaf Drive/Rolling Hills Road[B]	6.4	A	4.9	A
Crenshaw Blvd/Rolling Hills Road[B]	72.4	**E**	47.4	D
Crenshaw Blvd/Pacific Coast Hwy[A]	50.9	D	63.9	**E**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	49.1*	D	37.1*	D
Via Valmonte & Palos Verdes Dr. N[C] **(ST)**	34.4	D	29.7	D
Hawthorne Blvd/Palos Verdes Dr. N[D]	56.8	**E**	31.8	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	107.1	**F**	107.7	**F**
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	303.3	**F**	269.3	**F**
Newton Street & Calle Mayor[B] **(ST)**	14.5	B	12.1	B
Vista Montana & Newton Street[B] **(ST)**	15.6	C	11.3	B
Madison Street & Newton Street[B] **(ST)**	8.7	A	9.3	A
Pacific Coast Hwy/Calle Mayor[A]	119.6	**F**	190.1	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
ST = stop-sign-controlled intersection
* includes planned capital improvement for that intersection
[1] Average Intersection Delay for All Movements. Note: Overall Average Delay May Decrease Slightly with Added Traffic if the Added Volumes are within the Least Impacted Movements (per Conversation w/ McTrans Center, University of Florida – Authors of the HCM Software)
[2] LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

Cumulative (2019) Without-Project Traffic Conditions

Intersection Capacity Analysis (ICU Method)

Table 5.12-9, *Cumulative (2019) Without-Project Intersection Operation, ICU Method*, summarizes the cumulative peak hour service level calculations for the studied signalized intersections using the ICU method. As shown, most intersections operate at an acceptable LOS, with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in A.M. / LOS "F" in the P.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "E" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "F" in both A.M. and P.M. peak hours

Table 5.12-9 Cumulative (2019) Without-Project Intersection Operation, ICU Method

Intersection/Segment	A.M. Peak Hour		P.M. Peak Hour	
	V/C Ratio	LOS[1]	V/C Ratio	LOS[1]
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]*	0.772	C	0.769	C
Hawthorne Blvd/244th Street[B]	0.530	A	0.549	A
Hawthorne Blvd/Newton Street[B]	0.647	B	0.809	D
Hawthorne Blvd/Via Valmonte[B]	0.522	A	0.609	B
Hawthorne Blvd/Rolling Hills Road[B]	0.684	B	0.628	B
Whiffletree Lane/Rolling Hills Road[B]	0.399	A	0.407	A
Fallenleaf Drive/Rolling Hills Road[B]	0.326	A	0.294	A
Crenshaw Blvd/Rolling Hills Road[B]	0.811	D	0.867	D
Crenshaw Blvd/Pacific Coast Hwy[A]	0.913	**E**	1.032	**F**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	0.772	C	0.727	C
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.792	C	0.736	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.961	**E**	0.913	**E**
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.429	**F**	1.451	**F**
Pacific Coast Hwy/Calle Mayor[A]	0.998	**F**	1.059	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
[1] LOS in **boldface** are unacceptable (LOS E or worse)
*Includes Planned Capital Improvements
Source: KHR 2019

Intersection Capacity Analysis (HCM Method)

Table 5.12-10, *Cumulative (2019) Without-Project Intersection Operation, HCM Method*, summarizes the cumulative peak hour service level calculations for the studied signalized and stop-controlled intersections using the HCM method. As shown, most intersections operate at an acceptable LOS, with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy LOS "E" in the A.M. / LOS "F" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road LOS "F" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy LOS "E" in the P.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor LOS "F" in both A.M. and P.M. peak hours

Table 5.12-10 Cumulative (2019) Without-Project Intersection Operation, HCM Method

Intersection/Segment	A.M. Peak Hour		P.M. Peak Hour	
	Delay[1]	LOS[2]	Delay[1]	LOS[2]
Intersections				
Hawthorne Blvd/Pacific Coast Hwy[A]	55.2	**E**	81.3	**F**
Hawthorne Blvd/244th Street[B]	37.0	D	30.7	C
Hawthorne Blvd/Newton Street[B]	11.3	B	13.5	B
Hawthorne Blvd/Via Valmonte[B]	14.5	B	12.0	B
Hawthorne Blvd/Rolling Hills Road[B]	20.0	C	13.5	B
Whiffletree Lane/Rolling Hills Road[B]	5.5	A	4.3	A
Fallenleaf Drive/Rolling Hills Road[B]	6.5	A	5.0	A
Crenshaw Blvd/Rolling Hills Road[B]	82.8	**F**	50.9	D
Crenshaw Blvd/Pacific Coast Hwy[A]	54.4	D	69.5	**E**
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]	52.2	D	37.9	D
Via Valmonte & Palos Verdes Dr. N[C] **ST**	34.3	D	29.7	D
Hawthorne Blvd/Palos Verdes Dr. N[D]	58.6	**E**	33.6	C
Crenshaw Blvd/Palos Verdes Dr. N[D]	107.0	**F**	112.6	**F**
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	302.0	**F**	278.1	**F**
Newton Street & Calle Mayor[B] **ST**	14.6	B	12.1	B
Vista Montana & Newton Street[B] **ST**	16.0	C	11.4	B
Madison Street & Newton Street[B] **ST**	8.8	A	9.0	A
Pacific Coast Hwy/Calle Mayor[A]	120.3	**F**	189.0	**F**

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
ST = stop-sign-controlled intersection
[1] Average Intersection Delay for All Movements. Note: Overall Average Delay May Decrease Slightly with Added Traffic if the Added Volumes are within the Least Impacted Movements (per Conversation w/ McTrans Center, University of Florida – Authors of the HCM Software)
[2] LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

Cumulative Developments

Cumulative developments are development projects that are within the regional area of the project site that are either in the design or advanced planning stages or are under construction. The City of Torrance's Community Development Department in coordination with Traffic Engineering Division of Public Works provided a list of known development projects within the vicinity of this project and directed the applicant to include additional projects or contact adjacent cities based on comments received from the public. All projects included in the analysis were identified by the cities of Torrance, Rancho Palos Verdes, Rolling Hills Estates, Lomita, and Redondo Beach. The locations of these projects are shown on Figure 5.12-3, *Cumulative Projects Map*. Trip generation estimated for each of the projects is shown below in Table 5.12-11, *Cumulative Projects Estimated Trip Generation*.

Table 5.12-11 Cumulative Developments Estimated Trip Generation

Address and City	Land Use	Size and Units	Trip Generation		
			Daily	A.M. Peak Hour	P.M. Peak Hour
3210 Sepulveda Boulevard, Torrance	Assisted Living	130 beds	356	18	27
Near 3405 West Carson Street, Torrance	Independent Living/Assisted Living/Hotel	360 units	1,253	29	40
21515 Hawthorne Boulevard, Torrance	Commercial (Health Club & Gym/ Restaurant)	45,000 SF/ 12,000 SF	4,238	126	365
23104 Hawthorne Boulevard, Torrance	Day Care	10,023 SF	800	12	132
23550 Hawthorne Boulevard, Torrance	Restaurant/ Bank	1,500 SF/ 2,000 SF	1,387	109	123
24000 Garnier Street, Torrance	Medical Office	36,866 SF	1,332	91	137
2640 Lomita Boulevard, Torrance	Commercial (Costco w/ Car Wash/Gas) Replacing Prev. Costco + Medical Off.	13,500 SF net (Costco) + 75,000 SF medical office	3,696	201	286
24444 Hawthorne Boulevard, Torrance	Office/Residential	2,700 SF/ 8 DU	51	10	11
5601 Crestridge Road, Rancho Palos Verdes	Senior Condominiums	60 DU	480	33	44
927 Deep Valley Drive, Rolling Hills Estates	Condominiums/ Commercial (Replace Medical, Office, Retail Use)	75 DU 2,000 SF	-42	-14	-17
Near 67 Peninsula Center, Rolling Hills Estates	Commercial	16,000 SF	2,296	196	219
627 Deep Valley Drive, Rolling Hills Estates	Condominiums/ Commercial	58 DU 5,810 SF	636	13	51
250th & Narbonne, Lomita	Condominiums/ Commercial/ Industrial	20 DU 2,035 SF 4,281 SF	202	15	21
24516 Narbonne Avenue, Lomita	Townhomes/ Retail	22 DU 3,700 SF	128	10	11
25114 Narbonne Avenue, Lomita	Townhomes/ Retail	11 DU 3,500 SF	219	10	15
1730-1734 Pacific Coast Highway, Lomita	Commercial/ Retail	850 SF 180 SF	204	48	9
Mixed-Use Development, Torrance	Mixed-Use	11 DU 2,525 SF	85	15	16
337-341 Calle Miramar Redondo Beach	Mixed-Use	52 DU 10,108 SF	406	5	-36
1700 S Pacific Coast Highway, Redondo Beach	Mixed-Use	Not available	1,347	99	122
Total			**19,074**	**1,142**	**1,576**

Source: KHR 2019
DU= Dwelling Unit
SF= Square Feet

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Analysis of Future Traffic Conditions

Future traffic conditions (Baseline with-project, Ambient with and without-project, and Cumulative with and without-project) were modeled using both ICU and HCM methods separately. All 18 intersections were analyzed using the HCM method; the 14 signalized intersections were also analyzed using the ICU method. Caltrans evaluates intersection impacts using the HCM method, and unsignalized stop-controlled intersections are analyzed using the HCM method. For the purposes of calculating the estimates under with-project and cumulative traffic conditions, capital improvements slated for Pacific Coast Highway/Hawthorne Boulevard and Pacific Coast Highway/Vista Montana intersections were included. Additionally, under all with-project conditions, the Hawthorne Boulevard/Via Valmonte intersection analysis includes additional capacity provided by the additional left turn lane under proposed roadway improvements.

Figure 5.12-3 - Cumulative Developments Map

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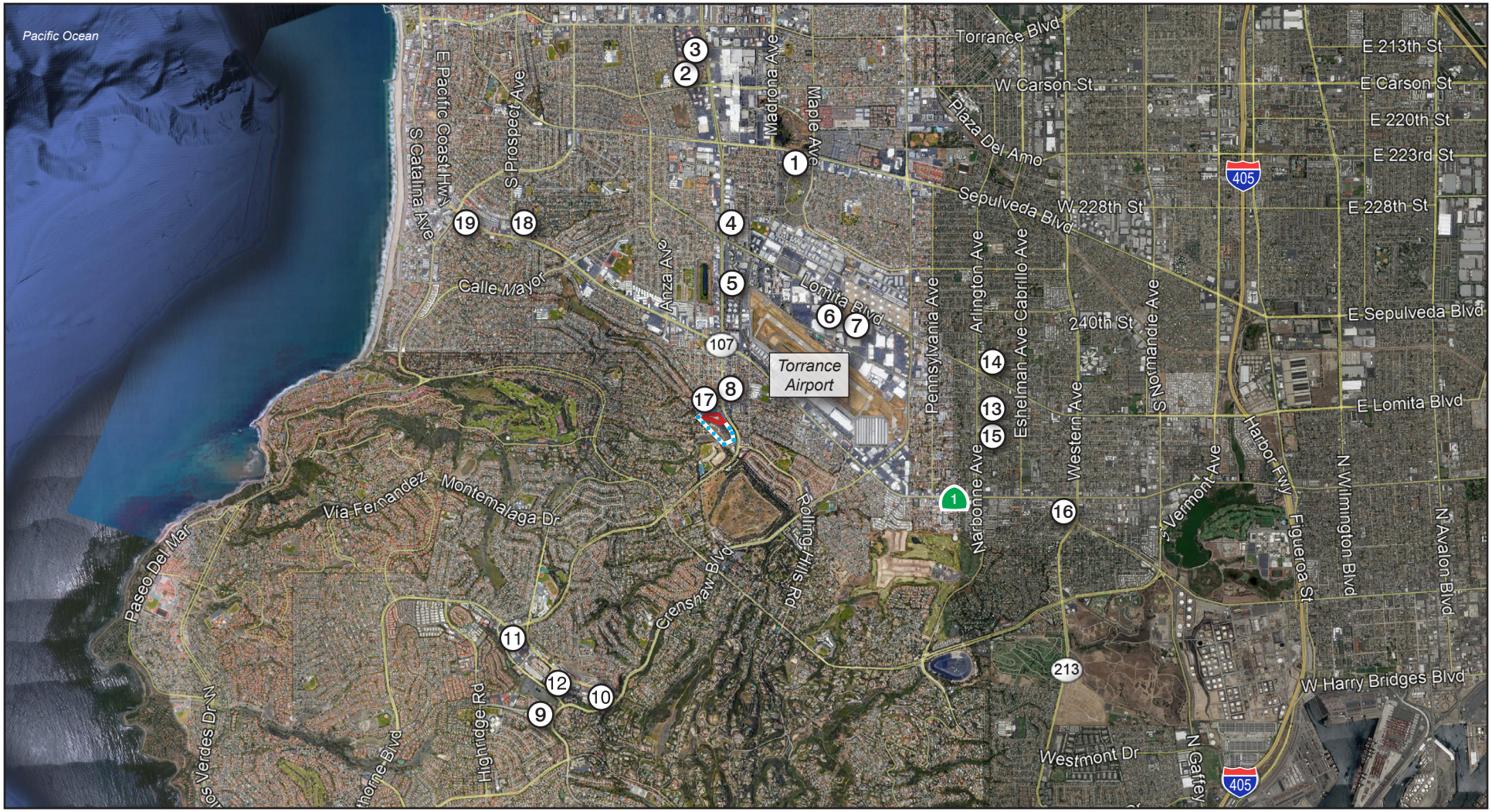

Source: KHR, 2018, Google Earth Pro, 2019

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5.12.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.12-1: Project-related trip generation would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. [Threshold T-1]

Impact Analysis: The TIS evaluated project-related traffic impacts on the City's circulation system utilizing both methodologies: ICU and HCM. As discussed, potential project-related traffic impacts were evaluated for five scenarios to determine potential project-related traffic impacts: (1) Baseline (2017) with-project Traffic Conditions; (2) Ambient (2019) without-project Traffic Conditions; (3) Ambient (2019) with-project Traffic Conditions; (4) Cumulative (2019) without-project Traffic Conditions; and (5) Cumulative (2019) with-project Traffic Conditions.

Baseline (2017) With-Project Traffic Conditions

Intersection Capacity Analysis (ICU Method)

Table 5.12-12, *Baseline With and Without-Project Impact Summary, ICU Method*, summarizes the baseline with-project peak hour service level with the comparison to baseline peak hour service level calculations for the studied signalized intersections using the ICU method. As shown, under both the Baseline (2017) and the Baseline (2017) With-Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N LOS "E" in the A.M. peak hour
- Rolling Hills Road/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor LOS "E" in the A.M / LOS "F" in the P.M. peak hour

Table 5.12-12 Baseline With and Without-Project Impact Summary, ICU Method

	Baseline (2017) without project				Baseline (2017) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	V/C Ratio	LOS[1]	V/C Ratio	LOS[1]	V/C Ratio	LOS[1]	V/C Ratio	LOS[1]	V/C Ratio	V/C Ratio	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]	0.878	D	0.870	D	0.886	D	0.878	D	0.008	0.008	No
Hawthorne Blvd/244th Street[B]	0.504	A	0.521	A	0.514	A	0.528	A	0.01	0.007	No
Hawthorne Blvd/Newton Street[B]	0.627	B	0.773	C	0.640	B	0.794	C	0.013	0.021	No
Hawthorne Blvd/Via Valmonte[B]*	0.576	A	0.633	B	0.521*	A	0.609*	B	0.055	0.024	No
Hawthorne Blvd/Rolling Hills Road[B]	0.658	B	0.606	B	0.660	B	0.609	B	0.002	0.003	No
Whiffletree Lane/Rolling Hills Road[B]	0.393	A	0.399	A	0.394	A	0.402	A	0.001	0.003	No
Fallenleaf Drive/Rolling Hills Road[B]	0.318	A	0.288	A	0.318	A	0.290	A	0	0.002	No
Crenshaw Blvd/Rolling Hills Road[B]	0.780	C	0.840	D	0.782	C	0.846	D	0.002	0.006	No
Crenshaw Blvd/Pacific Coast Hwy[A]	0.882	D	0.980	**E**	0.897	D	0.986	**E**	0.015	0.006	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]	0.779	C	0.843	D	0.783	C	0.847	D	0.004	0.004	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.764	C	0.709	C	0.766	C	0.712	C	0.002	0.003	No
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.939	**E**	0.884	D	0.940	**E**	0.885	D	0.001	0.001	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.398	**F**	1.401	**F**	1.399	**F**	1.402	**F**	0.001	0.001	No
Pacific Coast Hwy/Calle Mayor[A]	0.974	**E**	1.028	**F**	0.976	**E**	1.030	**F**	0.002	0.002	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
* Includes Project Related Improvements
[1]LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-12, the Baseline (2017) With-Project scenario under the ICU method does not increase volume/capacity by .02 or more and have a resulting LOS of E or worse at any study intersection within the City of Torrance, nor does the project result in a significant impact under Caltrans, the City of Rolling Hills Estate or Palos Verdes Estates at their respective intersections. Therefore, project impacts under this scenario are considered less than significant.

Intersection Capacity Analysis (HCM Method)

Table 5.12-13, *Baseline With and Without-Project Impact Summary, HCM Method*, summarizes the baseline with-project peak hour service level with the comparison to baseline peak hour service level calculations for the studied signalized and stop-controlled intersections using the HCM method. As shown, under both the Baseline (2017) and the Baseline (2017) With-Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Anza Avenue/Vista Mtn & Pacific Coast Hwy — LOS "E" in the A.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "F" in all conditions
- Rolling Hills Road/Palos Verdes Dr. N. — LOS "F" in all conditions
- Pacific Coast Hwy/Calle Mayor — LOS "F" in all conditions

Table 5.12-13 Baseline With and Without-Project Impact Summary, HCM Method

	Baseline (2017) without project				Baseline (2017) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[1]	Delay[1]	LOS[2]	Delay	Delay	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]	50.3	D	67.2	**E**	52.5	D	70.5	**E**	2.2	3.3	No
Hawthorne Blvd/244th Street[B]	21.8	C	21.9	C	26.3	C	24.8	C	4.5	2.9	No
Hawthorne Blvd/Newton Street[B]	10.9	B	12.6	B	11.1	B	13.3	B	0.2	0.7	No
Hawthorne Blvd/Via Valmonte[B]	11.6	B	15.0	B	14.3	B	18.7	B	2.7	3.7	No
Hawthorne Blvd/Rolling Hills Road[B]	17.5	B	13.7	B	17.7	B	13.7	B	0.2	0	No
Whiffletree Lane/Rolling Hills Road[B]	5.4	A	4.2	A	5.4	A	4.2	A	0	0	No
Fallenleaf Drive/Rolling Hills Road[B]	6.3	A	4.9	A	6.3	A	4.9	A	0	0	No
Crenshaw Blvd/Rolling Hills Road[B]	67.3	**E**	46.2	D	68.5	**E**	46.5	D	1.2	0.3	No

Table 5.12-13 Baseline With and Without-Project Impact Summary, HCM Method

	Baseline (2017) without project				Baseline (2017) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[1]	Delay[1]	LOS[2]	Delay	Delay	Significance
Crenshaw Blvd/Pacific Coast Hwy[A]	48.5	D	59.7	**E**	49.4	D	60.8	**E**	0.9	1.1	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]	72.3	**E**	44.8	D	76.9	**E**	45.6	D	4.6	0.8	No
Via Valmonte & Palos Verdes Dr. N[C]	29.7	D	26.7	D	29.8	D	26.8	D	0.1	0.1	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	55.3	**E**	31.2	C	56.1	**E**	31.6	C	0.8	0.4	No
Crenshaw Blvd/Palos Verdes Dr. N[D]	103.5	**F**	104.1	**F**	104.3	**F**	104.7	**F**	0.8	0.6	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	292.0	**F**	257.2	**F**	294.0	**F**	260.2	**F**	2	3	No
Newton Street & Calle Mayor[B]	14.0	B	11.8	B	14.0	B	11.8	B	0	0	No
Vista Montana & Newton Street[B]	15.0	B	11.1	B	15.1	C	11.1	B	0.1	0	No
Madison Street & Newton Street[B]	8.7	A	9.2	A	8.7	A	9.2	A	0	0	No
Pacific Coast Hwy/Calle Mayor[A]	112.1	**F**	179.9	**F**	113.4	**F**	181.5	**F**	1.3	1.6	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
[1] Average Intersection Delay for All Movements. Note: Overall Average Delay May Decrease Slightly with Added Traffic if the Added Volumes are within the Least Impacted Movements (per Conversation w/ McTrans Center, University of Florida – Authors of the HCM Software)
[2] LOS in boldface are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-13, the Baseline (2017) With-Project scenario under the HCM method does not result in a decrease from acceptable to unacceptable LOS or result in any change of operation conditions if already operating at unacceptable operation conditions at any study intersection under the thresholds established for the Cities of Torrance, Rolling Hills Estates and Palos Verde Estates, or Caltrans. Therefore, project impacts under this scenario are considered less than significant.

Ambient (2019) With-Project Traffic Conditions

Intersection Capacity Analysis (ICU Method)

Table 5.12-14, *Ambient (2019) With and Without-Project Impact Summary, ICU Method*, summarizes the ambient (2019) with-project peak hour service level with the comparison to ambient (2019) without-project peak hour service level calculations for the studied signalized intersections using the ICU method. As shown, under both the Ambient Without (2019) and the Ambient (2019) With-Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N LOS "E" in the A.M. peak hour

- Rolling Hills Road/Palos Verdes Dr. N. LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor LOS "E" in the A.M / LOS "F" in the P.M. peak hour

Table 5.12-14 Ambient (2019) With and Without-Project Impact Summary, ICU Method

	Ambient (2019) without project				Ambient (2019) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	V/C Ratio	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]*	0.809	C	0.700	C	0.817	D	0.761	C	0.008	0.061	No
Hawthorne Blvd/244th Street[B]	0.512	A	0.529	A	0.522	A	0.536	A	0.01	0.007	No
Hawthorne Blvd/Newton Street[B]	0.638	B	0.786	C	0.652	B	0.807	D	0.014	0.021	No
Hawthorne Blvd/Via Valmonte[B]	0.586	A	0.643	B	0.529**	A	0.619**	B	0.057	0.024	No
Hawthorne Blvd/Rolling Hills Road[B]	0.670	B	0.617	B	0.672	B	0.620	B	0.002	0.003	No
Whiffletree Lane/Rolling Hills Road[B]	0.397	A	0.404	A	0.399	A	0.407	A	0.002	0.003	No
Fallenleaf Drive/Rolling Hills Road[B]	0.323	A	0.292	A	0.324	A	0.294	A	0.001	0.002	No
Crenshaw Blvd/Rolling Hills Road[B]	0.795	C	0.854	D	0.796	C	0.854	D	0.001	0	No
Crenshaw Blvd/Pacific Coast Hwy[A]	0.897	D	0.998	**E**	0.899	D	0.998	**E**	0.002	0	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	0.794	C	0.858	C	0.798	C	0.862	C	0.004	0.004	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.778	C	0.721	C	0.779	C	0.724	C	0.001	0.003	No
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.956	**E**	0.900	**E**	0.957	**E**	0.900	**E**	0.001	0	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.424	**F**	1.429	**F**	1.427	**F**	1.429	**F**	0.003	0	No
Pacific Coast Hwy/Calle Mayor[A]	0.992	**E**	1.047	**F**	0.994	**E**	1.048	**F**	0.002	0.001	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
* Includes Planned Capital Improvements
**Includes Project Related Improvements
[1]LOS in boldface are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-14, the Ambient (2019) With-Project scenario under the ICU method does not increase volume/capacity by .02 or more and have a resulting LOS of E or worse at any study intersection within the City of Torrance, nor does the project result in a significant impact under Caltrans, the City of Rolling Hills Estate or Palos Verdes Estates at their respective intersections. Therefore, project impacts under this scenario are considered less than significant.

Intersection Capacity Analysis (HCM Method)

Table 5.12-15, *Ambient (2019) With and Without-Project Impact Summary, HCM Method*, summarizes the baseline with-project peak hour service level with the comparison to baseline peak hour service level calculations for the studied signalized and stop-controlled intersections using the HCM method. As shown, under both the Ambient Without (2019) and the Ambient (2019) With-Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "F" in both A.M. and P.M. peak hours

Table 5.12-15 Ambient (2019) With and Without-Project Impact Summary, HCM Method

	Ambient (2017) without project				Ambient (2017) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay	Delay	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]*	47.5*	D	64.4*	**E**	49.8	D	71.4	**E**	2.3	7	No
Hawthorne Blvd/244th Street[B]	24.1	C	24.1	C	29.8	C	27.4	C	5.7	3.3	No
Hawthorne Blvd/Newton Street[B]	11.0	B	12.9	B	11.4	B	13.7	B	0.4	0.8	No
Hawthorne Blvd/Via Valmonte[B]	11.9	B	10.7	B	14.5	B	12.0	B	2.6	1.3	No
Hawthorne Blvd/Rolling Hills Road[B]	18.5	B	13.6	B	18.7	B	13.6	B	0.2	0	No
Whiffletree Lane/Rolling Hills Road[B]	5.5	A	4.2	A	5.4	A	4.3	A	0.1	0.1	No
Fallenleaf Drive/Rolling Hills Road[B]	6.4	A	4.9	A	6.4	A	4.9	A	0	0	No
Crenshaw Blvd/Rolling Hills Road[B]	72.4	**E**	47.4	D	73.7	**E**	47.8	D	1.3	0.4	No
Crenshaw Blvd/Pacific Coast Hwy[A]	50.9	D	63.9	**E**	52.1	D	65.1	**E**	1.2	1.2	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	49.1*	D	37.1*	D	51.1*	D	37.6*	D	2	0.5	No

Table 5.12-15 Ambient (2019) With and Without-Project Impact Summary, HCM Method

	Ambient (2017) without project				Ambient (2017) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay	Delay	Significance
Via Valmonte & Palos Verdes Dr. N[C]	34.4	D	29.7	D	34.4	D	30.2	D	0	0.5	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	56.8	**E**	31.8	C	58.7	**E**	32.2	C	1.9	0.4	No
Crenshaw Blvd/Palos Verdes Dr. N[D]	107.1	**F**	107.7	**F**	108	**F**	108.3	**F**	0.9	0.6	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	303.3	**F**	269.3	**F**	305.4	**F**	272.4	**F**	2.1	3.1	No
Newton Street & Calle Mayor[B]	14.5	B	12.1	B	14.5	B	12.1	B	0	0	No
Vista Montana & Newton Street[B]	15.6	C	11.3	B	15.8	C	11.3	B	0.2	0	No
Madison Street & Newton Street[B]	8.7	A	9.3	A	8.7	A	9.4	A	0	0.1	No
Pacific Coast Hwy/Calle Mayor[A]	119.6	**F**	190.1	**F**	120.9	**F**	191.7	**F**	1.3	1.6	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
*Includes Planned Capital Improvements
[1] Average Intersection Delay for All Movements. Note: Overall Average Delay May Decrease Slightly with Added Traffic if the Added Volumes are within the Least Impacted Movements (per Conversation w/ McTrans Center, University of Florida – Authors of the HCM Software)
[2] LOS in boldface are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-15, the Ambient (2019) With-Project scenario under the HCM method does not result in a decrease from acceptable to unacceptable LOS or result in any change of operation conditions if already operating at unacceptable operation conditions at any study intersection. Therefore, project impacts under this scenario are considered less than significant.

Cumulative (2019) With-Project Traffic Conditions

Intersection Capacity Analysis (ICU Method)

Table 5.12-16, *Cumulative (2019) With and Without-Project Impact Summary, ICU Method*, summarizes the cumulative (2019) with-project peak hour service level with the comparison to cumulative (2019) without-project peak hour service level calculations for the studied signalized intersections using the ICU method. As shown, under both the Cumulative Without (2019) and the Cumulative (2019) With-Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the all peak hour for Cumulative Without-Project; LOS "E" in A.M./LOS "F" in P.M. for Cumulative With-Project
- Crenshaw Blvd/Palos Verdes Dr. N — LOS "E" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "F" in both A.M. and P.M. peak hours

Table 5.12-16 Cumulative (2019) With and Without-Project Impact Summary, ICU Method

	Cumulative (2019) without project				Cumulative (2019) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	V/C Ratio	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]*	0.772	C	0.769	C	0.779	C	0.776	C	0.007	0.007	No
Hawthorne Blvd/244th Street[B]	0.530	A	0.549	A	0.540	A	0.556	A	0.01	0.007	No
Hawthorne Blvd/Newton Street[B]	0.647	B	0.809	D	0.660	B	0.830	D	0.013	0.021	No
Hawthorne Blvd/Via Valmonte[B]	0.522	A	0.609	B	0.540**	A	0.633**	B	0.018	0.024	No
Hawthorne Blvd/Rolling Hills Road[B]	0.684	B	0.628	B	0.686	B	0.631	B	0.002	0.003	No
Whiffletree Lane/Rolling Hills Road[B]	0.399	A	0.407	A	0.401	A	0.410	A	0.002	0.003	No
Fallenleaf Drive/Rolling Hills Road[B]	0.326	A	0.294	A	0.327	A	0.296	A	0.001	0.002	No
Crenshaw Blvd/Rolling Hills Road[B]	0.811	D	0.867	D	0.813	D	0.868	D	0.002	0.001	No
Crenshaw Blvd/Pacific Coast Hwy[A]	0.913	**E**	1.032	**F**	0.919	**E**	1.033	**F**	0.006	0.001	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	0.772	C	0.727	C	0.776	C	0.780	C	0.004	0.053	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	0.792	C	0.736	C	0.793	C	0.739	C	0.001	0.003	No
Crenshaw Blvd/Palos Verdes Dr. N[D]	0.961	**E**	0.913	**E**	0.962	**E**	0.914	**E**	0.001	0.001	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	1.429	**F**	1.451	**F**	1.431	**F**	1.451	**F**	0.002	0	No
Pacific Coast Hwy/Calle Mayor[A]	0.998	**F**	1.059	**F**	1.000	**F**	1.061	**F**	0.002	0.002	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
* Includes Planned Capital Improvements
**Includes Project Related Improvements
[1]LOS in boldface are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-16, the Cumulative (2019) With-Project scenario under the ICU method does not increase volume/capacity by .02 or more and have a resulting LOS of E or worse at any study intersection

within the City of Torrance, nor does the project result in a significant impact under Caltrans, the City of Rolling Hills Estate or Palos Verdes Estates at their respective intersections.

Intersection Capacity Analysis (HCM Method)

Table 5.12-17, *Cumulative (2019) With and Without-Project Impact Summary, HCM Method*, summarizes the baseline with-project peak hour service level with the comparison to baseline peak hour service level calculations for the studied signalized and stop-controlled intersections using the HCM method. As shown, under both the Cumulative Without (2019) and the Cumulative (2019) With Project scenario, most intersections operate at an acceptable LOS, with the exception of the following:

- Hawthorne Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Crenshaw Blvd/Rolling Hills Road — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Pacific Coast Hwy — LOS "E" in the P.M. peak hour
- Hawthorne Blvd/Palos Verdes Dr. N. — LOS "E" in the A.M. peak hour
- Crenshaw Blvd/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Rolling Hills Road/Palos Verdes Dr. N. — LOS "F" in both A.M. and P.M. peak hours
- Pacific Coast Hwy/Calle Mayor — LOS "F" in both A.M. and P.M. peak hours

Table 5.12-17 Cumulative (2019) With and Without-Project Impact Summary, HCM Method

	Cumulative (2019) without project				Cumulative (2019) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay	Delay	Significance
Hawthorne Blvd/Pacific Coast Hwy[A]*	55.2	**E**	81.3	**F**	56.2*	**E**	84.4*	**F**	1	3.1	No
Hawthorne Blvd/244th Street[A]	37.0	D	30.7	C	36.0	D	34.3	C	-1	3.6	No
Hawthorne Blvd/Newton Street[B]	11.3	B	13.5	B	11.6	B	14.4	B	0.3	0.9	No
Hawthorne Blvd/Via Valmonte[B]	14.5	B	12.0	B	14.7	B	12.3	B	0.2	0.3	No
Hawthorne Blvd/Rolling Hills Road[B]	20.0	C	13.5	B	20.2	C	13.5	B	0.2	0	No
Whiffletree Lane/Rolling Hills[B] Road	5.5	A	4.3	A	5.5	A	4.3	A	0	0	No
Fallenleaf Drive/Rolling Hills Road[B]	6.5	A	5.0	A	6.5	A	5.0	A	0	0	No
Crenshaw Blvd/Rolling Hills Road[B]	82.8	**F**	50.9	D	82.9	**F**	51.0	D	0.1	0.1	No
Crenshaw Blvd/Pacific Coast Hwy[A]	54.4	D	69.5	**E**	54.8	D	69.9	**E**	0.4	0.4	No
Anza Avenue/Vista Montana & Pacific Coast Hwy[A]*	52.2	D	37.9	D	53.2*	D	38.0*	D	1	0.1	No
Via Valmonte & Palos Verdes Dr. N[C]	34.3	D	29.7	D	34.4	**D**	30.2	C	.1	0.5	No
Hawthorne Blvd/Palos Verdes Dr. N[D]	58.6	**E**	33.6	C	59.1	**E**	33.9	C	0.5	0.3	No

Table 5.12-17 Cumulative (2019) With and Without-Project Impact Summary, HCM Method

	Cumulative (2019) without project				Cumulative (2019) with project				Change		
	A.M.		P.M.		A.M.		P.M.		A.M.	P.M.	
Intersections	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay	Delay	Significance
Crenshaw Blvd/Palos Verdes Dr. N[D]	107.0	**F**	112.6	**F**	107	**F**	112.5	**F**	0	-0.1	No
Rolling Hills Rd/Palos Verdes Dr. N[D/E]	302.0	**F**	278.1	**F**	301.7	**F**	278.3	**F**	-0.3	0.2	No
Newton Street & Calle Mayor[B]	14.6	B	12.1	B	14.6	B	12.1	B	0	0	No
Vista Montana & Newton Street[B]	16.0	C	11.4	B	16.2	C	11.5	B	0.2	0.1	No
Madison Street & Newton Street[B]	8.8	A	9.0	A	8.8	A	9.6	A	0	0.6	No
Pacific Coast Hwy/Calle Mayor[A]	120.3	**F**	189.0	**F**	120.1	**F**	188.6	**F**	-0.2	-0.4	No

Under the Jurisdiction of [A] Caltrans; [B] Torrance; [C] Palos Verdes Estates; [D] Rolling Hills Estates; [E] Rolling Hills
*Includes Planned Capital Improvements
[1] Average Intersection Delay for All Movements. Note: Overall Average Delay May Decrease Slightly with Added Traffic if the Added Volumes are within the Least Impacted Movements (per Conversation w/ McTrans Center, University of Florida – Authors of the HCM Software)
[2] LOS in **boldface** are unacceptable (LOS E or worse)
Source: KHR 2019

As shown in Table 5.12-17, the Cumulative (2019) With-Project scenario under the HCM method does not result in a decrease from acceptable to unacceptable LOS or result in any change of operating conditions if already operating at unacceptable operation conditions at any study intersection under the thresholds established for the Cities of Torrance, Rolling Hills Estates and Palos Verde Estates, or Caltrans. Therefore, project impacts under this scenario are considered less than significant.

Project Impacts Summary

As shown in Tables 5.12-12, 5.12-14, and 5.12-16, the Baseline (2017), Ambient (2019) With-Project, and the Cumulative (2019) With and Without-Project Impact Summary, scenarios under the ICU method does not increase volume/capacity by .02 or more and have a resulting LOS of E or worse within the City of Torrance, nor does the project result in a significant impact under Caltrans, the City of Rolling Hills Estate or Palos Verdes Estates at their respective intersections. Therefore, all scenarios under ICU method are considered less than significant.

Additionally, as shown in Tables 5.12-13, 5.12-15, and 5.12-17, Baseline (2017), Ambient (2019) and Cumulative (2019) With-Project scenario under the HCM method does not decrease from acceptable to unacceptable LOS or result in any change of operation conditions if already operating at unacceptable operation conditions under the thresholds established for the Cities of Torrance, Rolling Hills Estates and Palos Verde Estates, or Caltrans. Therefore, all scenarios under HCM method are considered less than significant.

Roadway Segment Analysis

Table 5.12-18, *Roadway Segment Analysis*, summarizes the daily traffic volume roadway segment LOS results for the roadways that would allow access to the project site. As shown, the only change in roadway segment LOS is on Via Valmonte adjacent to the project site from LOS "A" to "B" under the cumulative with project traffic

conditions. Compared to the Baseline condition, the proposed project would not result in a degradation of service. Overall, all roadway segments would continue to operate at acceptable LOS under all conditions and no impacts would occur.

Table 5.12-18 Roadway Segment Operation

	Baseline (2017)		Ambient (2019) without project		Ambient (2019) with project		Cumulative (2019) with project	
	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
Hawthorne Boulevard south of Via Valmonte	36,253	B	36,982	B	37,791	B	38,616	B
Via Valmonte west of Hawthorne Boulevard	6,437	A	6,566	A	7,106	A	7,523	B

Source: KHR 2019

Level of Significance before Mitigation: Project related trip generation would not result in a significant delay or increase in level of service at any identified intersection within the Cities of Torrance, Rolling Hills Estates, Palos Verdes Estates or at a Caltrans intersection or roadway.

Impact 5.12-2: Project-related trip generation in combination with baseline and proposed cumulative development would not result in designated road and/or highways exceeding county congestion management agency service standards. [Threshold T-2]

Impact Analysis: This section presents an analysis of the potential impact on the regional transportation system. The analysis was conducted in accordance with the procedures outlined in the Congestion Management Program (CMP) for Los Angeles County, which was adopted by Metro in 2010. The CMP requires that, when an EIR is prepared for a project, local jurisdictions are responsible for assessing the impacts of new development on the CMP system. As defined in the Plan, the acceptable LOS standard in Los Angeles County is LOS "E" or the base year LOS, where the base year LOS is worse than "E".

The only CMP Highway System located within the study area is the Pacific Coast Highway. As shown in Table 5.12-16, project impacts to CMP roadways and intersections would not be significant at any of the CMP intersections along Pacific Coast Highway and impacts would be less than significant.

Level of Significance before Mitigation: Project generated traffic would not result in a delay of service at any CMP roadway or intersection. This Impact would be less than significant.

Impact 5.12-3: Project-related construction traffic would not exceed traffic threshold volumes; however, construction could result in temporary and short-term traffic detours and disruptions. [Threshold T-1]

Impact Analysis: For purposes of determining if construction of the proposed project would result in a significant traffic impact, an analysis of the projects construction trips was qualitatively performed. The construction analysis is based on information provided by the project applicant and included in the CalEEMod construction analysis. The construction duration is assumed to be approximately 29 months (assumes a 5 day per week, 8-hour per day work schedule), which includes the following construction phases:

Grading: 4 months
Building Construction, Parking Garage: 7 months
Paving: 2 months
Building Construction, Residential (above parking): 18 months
Application of Architectural Coatings: 3 months

The 4-month grading phase will include site grading, remediation, temporary shoring, and installation of utilities. The temporary shoring would be approximately 125 feet long.

Both the parking garage and the residential development would be painted during the three-month architectural coating phase. The residential building construction phase and the architectural coating phase would end during the same month because the residential building construction phase duration includes finalization of the project construction and exterior improvements as well as demobilization.

The rough grading and haul phase are anticipated to result in the highest trip generation potential when compared to the remaining phases and thus has been selected for analysis. Construction-worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. Haul truck trips during the grading phase were based on project applicant–provided earthwork quantities. Grading is estimated to involve 120,915 cubic yards (CY) of cut and 1,646 CY of fill, resulting in 119,270 CY of soil for export. Assuming an industry standard haul truck capacity of 16 CY per truck, earth-moving activities would result in approximately 7,455 round trips (14,910 one-way truck trips) during the grading phase. As shown in Table 5.2-6, Construction Scenario Assumptions, the proposed project would generate 24 worker passenger vehicles and 171 one-way truck trips per day. Project construction-related traffic is less than the net proposed project traffic at buildout. As determined under Impact 5.12-1, the proposed project would not result in significant traffic impacts or exceed LOS for any of the five scenarios analyzed (Baseline With-Project, Ambient (2019) With and Without-Project, and Cumulative With and Without-Project Summary). Since the construction phase would result in less trips than the buildout phase, impacts resulting from construction traffic would be less than significant.

Project Construction Management Plan Criteria

Project construction related trips associated with trucks and employees traveling to and from the project site in the morning and afternoon during project construction activities may result in some minor traffic delays. It is anticipated that all of the construction-related traffic will utilize Hawthorne Boulevard to access the I-405 Freeway or Pacific Coast Highway and the I-110 Freeway to gain regional access to the project site.

Temporary and short-term traffic detours and traffic disruptions could result during project construction activities including implementation of access and circulation improvements to the project site. Accordingly, the project applicant would be responsible for the preparation and submittal of a construction area traffic management plan to ensure that project related construction traffic does not interfere with operations along Hawthorne Boulevard or Via Valmonte.

Potential traffic interference caused by construction vehicles may create a temporary/short-term impact to vehicles using the street system in the immediate area in the morning and afternoon hours. The TIA includes further recommendations to incorporate in the Construction Traffic Management Plan to minimize temporary traffic impacts on the local circulation system.

Level of Significance before Mitigation: Impact 5.12-3 would be potentially significant.

Impact 5.12-4: Implementation of the proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. [Threshold T-1]

Impact Analysis: The nearest bicycle facility to the project site shown on the Metro Bike Map is a signed (Class III) bike route on Rolling Hills Road extending east from Hawthorne Boulevard (Metro 2014). A sidewalk is present on the north side of Via Valmonte near the northeast corner of the project site. Two public transit bus lines, Metro Line 344 and City of Los Angeles Department of Transportation (LADOT) Commuter Express 448, operate on Hawthorne Boulevard past the site (Metro 2016). Metro Line 344 extends north-south from the Community of Harbor Gateway in the City of Los Angeles to the City of Rancho Palos Verdes, and LADOT Route 448 extends north-south from downtown Los Angeles to the City of Rancho Palos Verdes. The nearest bus stops to the project site are on Hawthorne Boulevard near Newton Street and near Rolling Hills Road.

Project development would not interfere with existing bus stops on Hawthorne Boulevard or with the bike route on Rolling Hills Road. The project proposes sidewalks on the site frontages along Hawthorne Boulevard and Via Valmonte and along parts of the proposed network of driveways onsite. The project would improve pedestrian access to and near the site, and impacts would be less than significant.

Impact 5.12-5: Project circulation improvements have been designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access. [Thresholds T-3, T-4]

Impact Analysis: The TIS evaluated the proposed site plan and circulation system to evaluate the potential for hazardous conditions, and adequate emergency access. Conflicts have the potential to occur if: 1) there is inadequate site access; 2) there is inadequate sight distance, 3) there is an inadequate capacity that would lead to vehicle queuing; or 4) there is inadequate emergency access.

Site Access

As discussed in Chapter 3, *Project Description*, and Figure 3-6, *Site Plan,* vehicular access for the project site would be provided via two driveways: one main driveway on Hawthorne Boulevard and one exit-only driveway on Via Valmonte. Both turn movements at these two driveways will be restricted to right turns only, with the exception of emergency vehicle access at the driveway on Via Valmonte. Additionally, there are no gates or speed bumps impeding traffic to enter the project site. Therefore, there would be no queuing of entering vehicles that could back up onto Hawthorne Boulevard and no impact related to site access would occur.

Sight Distance

A sight distance analysis from exiting vehicles on the proposed driveway on Hawthorne Boulevard was conducted to determine if the design of the driveway would create a hazardous roadway condition. As discussed above, the proposed driveway on Hawthorne Boulevard would provide right-in-right-out access only, with all vehicles requiring stopping before entering onto Hawthorne Boulevard. Assuming a design speed of 45 miles per hour, the line of sight northward from the driveway exit lane limit line would be 290 feet to the center of

the lane closest to the sidewalk curb and 495 feet to the center of the lane nearest the median. The traffic formed by these two lines of sight is within the cone of visibility by a driver exiting the project site. Therefore, the proposed driveway and improvements to Hawthorne Boulevard, including the widening and restriping of a traffic lane to add a southbound right turn lane between Via Valmonte and the proposed driveway for vehicles to decelerate and enter the project site, would provide adequate sight distance at the intersection of the driveway and Hawthorne Boulevard and would not result in hazardous conditions at that intersection due to inadequate sight distance. Impacts related to sight distance would be less than significant and no mitigation is required.

Queuing Analysis

The TIS also included a queuing analysis of eastbound vehicles queuing at the intersection of Hawthorne Boulevard and Via Valmonte to show the number of vehicles that typically wait during the A.M. peak hour period. Two field surveys were conducted in total to identify the number of vehicles stopped in the left turn lane at each traffic signal cycle: the first conducted in 2016 between 7:00 A.M. and 8:00 A.M. and the second conducted in 2018 between 7:00 A.M. and 9:00 A.M. According to the results, the total number of vehicles that have to wait in the left turn lane during a red light during the peak hour period was 162 vehicles and the longest queue observed was nine vehicles. Additionally, there were a total of 40 traffic signal cycles, 90 seconds each.

In order to estimate the impact of additional project related trips to the left turn queue, the trip generation/distribution during the A.M. peak hour (refer to Appendix J) was added to the surveyed vehicles. A total of 55 A.M. peak hour, left turning Project vehicles were shown leaving the site from the Via Valmonte driveway, which divided by 40 traffic signal cycles, equals an average of 1.4 vehicles per cycle. The 55 Project vehicles added to the surveyed 162 vehicles brought the future hourly total to an estimated 217 vehicles turning left during the A.M. hour with Project buildout. Divided by 40 traffic signal cycles, the average queue for left turn movements is 5.4 vehicles during the A.M. peak hour.

To estimate a worst-case scenario, the average Project vehicles per cycle (i.e., 1.4) added to the 95th percentile of the maximum observed queue (i.e., nine x .95 = 8.6) brought the total worst-case queue to 10 vehicles. As discussed above, the proposed improvements to Via Valmonte would provide 250 feet of total queuing length in the two proposed lanes on eastbound Via Valmonte, which would accommodate at least 10 vehicles spaced 25 feet apart (refer to Appendix J for details on calculations for the queuing analysis) . Therefore, with the proposed intersection improvements, there would be adequate capacity to accommodate the total estimate number of vehicles generated from the project during the A.M. peak hour period.

Additionally, queuing was also analyzed for a signal cycle of two minutes, that is, 30 cycles per hour, at the request of the City of Torrance. Under the new signal cycle, the estimated worst-case queue with a two-minute signal cycle including project-generated traffic would be 14 vehicles. This would exceed the proposed queueing capacity of the eastbound approach to the affected intersection by 4 vehicles. This would be a potentially significant impact without mitigation.

A second queuing analysis was performed for the northbound left-turn movement at the Hawthorne Boulevard/Pacific Coast Highway intersection. Results of the analysis showed an average vehicle movement of 11 vehicles per cycle and determined a worst-case queuing demand of 19 vehicles. The left-turn lane capacity is approximately 21 vehicles, indicating sufficient left-turn lane capacity to accommodate A.M. peak hour demands. During the P.M. peak hour, an average of 12 vehicles per cycle was observed, resulting in the same

worst-case queuing demand of 21 vehicles, equaling capacity. Proposed Capital Project improvements for the northbound left-turn movement include construction of an asphalt berm at the 242nd St. crossing and elimination of the existing "keep clear" zone, which would provide queuing capacity for two additional vehicles. Project related traffic is anticipated to result in 10 additional vehicles per cycle during the A.M. peak period. This would result in a "worst-case" condition of 19 vehicles, which is below the current capacity of 21 vehicles and the future capacity of 23 vehicles. Impacts to circulation in this regard would be less than significant.

Emergency Access

Raised traffic movement barriers in the entrance to the Via Valmonte driveway would allow only emergency vehicles to turn left into the driveway from westbound Via Valmonte. The Via Valmonte driveway would otherwise be restricted to right-in-right-out movements only. The project would provide sufficient emergency access to the site, and no impact would occur due to insufficient emergency access.

Level of Significance before Mitigation: On-site circulation would not result in significant impacts related to site access, vehicle-pedestrian conflicts, or emergency access; the project would not impede evacuation routes. Off-site queueing delay from the project driveway on Via Valmonte would not exceed the capacity of the existing left-turn pocket at the intersection of Via Valmonte and Hawthorne Boulevard with the project implemented roadway improvements.

5.12.4 Project VMT

As stated in Section 5.11.1.1, Regulatory Setting, SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes in many parts of California (if not statewide) will include the elimination of auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). While the updated CEQA Guidelines went into effect in December 2018, the update provides agencies with an opt-in period until July 1, 2020 to adopt the new VMT-based criteria under the updated CEQA Guidelines. Since the City of Torrance has not yet opted to adopt the new VMT-based criteria, the City still considers automobile delay as a significant impact, and the City will continue to use the established LOS criteria.

5.12.5 Cumulative Impacts

Cumulative traffic impacts are analyzed above in Impact 5.12-1. The cumulative scenario analyzed in the TIS involved traffic generation by 19 related projects in the cities of the cities of Torrance, Rancho Palos Verdes, Rolling Hills Estates, Lomita, and Redondo Beach. Cumulative impacts would be less than significant.

Other impacts—such as hazardous conditions and emergency access—are site-specific and would not combine with impacts of other projects to cause cumulative impacts.

5.12.6 Baseline Regulations and Standard Conditions

This analysis describes compliance with all applicable laws. The following codes, rules, and regulations pertain to traffic were described in Section, 5.12.1.3 *Regulatory Background.*

State

- Sustainable Communities and Climate Protection Act (SB 375)
- Senate Bill 743

Regional

- Los Angeles County General Plan Mobility Element
- Congestion Management Program
- Regional Transportation Plan

City of Torrance

- City of Torrance General Plan Circulation and Infrastructure Element
- City of Torrance Development Impact Fees

5.12.7 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impact 5.12-1 (exceedance of LOS on local roadway network); Impact 5.12-2 (CMP facilities); Impact 5.12-4 (alternative transportation policies); and Impact 5.12-5 (project safety features/queuing).

Without mitigation, these impacts would be potentially significant:

- **Impact 5.12-3:** Project-related construction traffic would not exceed traffic threshold volumes; however, could result in temporary and short-term traffic detours and disruptions.

5.12.8 Mitigation Measures

The following mitigation measures have been identified to reduce potential construction related impacts.

Impact 5.12-3

TR-1 Prior to the issuance of grading permits, the project applicant shall prepare a Construction Traffic Management Plan in coordination with the City of Torrance City Traffic Engineer. The Plan, at a minimum, shall include the following:

- All construction vehicles accessing the site shall be of legal weight, length, width and height unless oversize load permits are secured from the City and all other agencies through which loads will be carried.
- All trucks used in the construction of this project shall travel only on Truck Routes as defined in Section 61.9.2 of the Torrance Municipal Code.
- All construction traffic shall enter the site from the north via a right turn from southbound Hawthorne Boulevard. All construction traffic and shall exit the site via a right turn onto

Via Valmonte and then left turn onto northbound Hawthorne Boulevard. No traffic shall be allowed on Via Valmonte west of the site and no construction truck traffic shall be allowed to travel south on Hawthorne Boulevard.

- No construction vehicle(s) shall be allowed at any time to stage or queue on City streets or rights-of-way. All truck staging or queuing shall take place on-site.
- Vehicle parking for all workers at the site shall be accommodated on-site with no worker parking permitted on City streets. The developer shall provide areas for worker parking at all times during construction.
- Construction trucks shall not travel on any street within the City of Torrance on Saturdays and Sundays. Construction trucks shall not travel on any City street before 8:30 AM or after 4:00 PM on weekdays (Monday through Friday).
- Spillage of material of any kind from trucks is prohibited. All construction vehicles shall be enclosed and sealed to prevent any material spillage onto any street in the City.
- Trucks and truck wheels and tires shall be cleaned before entering City streets from the site to prevent any wheel tracking or deposition of material on any City street.
- Haul trucks entering or exiting public streets shall at all times yield to public traffic.
- If hauling operations cause any damage to existing pavement, street, curb and/or gutter along the haul route, the applicant will be fully responsible for repairs. The repairs shall be completed to the satisfaction of the City Engineer.
- All constructed-related parking and staging of vehicles will be kept out of the adjacent public roadways and parking lots and will occur on-site.
- This Plan shall meet standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as City of Torrance requirements.

5.12.9 Level of Significance After Mitigation

Impact 5.12-3

Mitigation Measure TR-1 would ensure that a construction traffic management plan is in place to eliminate the potential for conflicts related to construction equipment, haul trips, and worker trips. Compliance with the construction traffic management plan would ensure that temporary construction related traffic impacts would be less than significant.

5.12.10 References

California Department of Transportation (Caltrans). 2002, December. Guide for the Preparation of Traffic Impact Studies. http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf.

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5. Environmental Analysis
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Los Angeles County Department of Public Works (LACDPW). 1997 January. Traffic Impact Analysis Guidelines. https://www.torranceca.gov/home/showdocument?id=43955

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Southern California Association of Governments (SCAG). 2016, April. 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

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5.13 TRIBAL CULTURAL RESOURCES

Tribal cultural resources include landscapes, sacred places, or objects with cultural value to a California Native American tribe. This section of the DEIR evaluates the potential of the project to impact tribal cultural resources. Other potential impacts to cultural resources (i.e., prehistoric and historic cultural resources and disturbance of human remains) are evaluated in Section 5.3, *Cultural Resources*.

The information in this section is based on the following information:

- *Cultural Resources Investigation Report (CRIR) for the Solana Residential Development Within the City of Torrance, Los Angeles County, California*, Paleo Solutions, Inc., November 12, 2018. (Included as Appendix D to this EIR).
- A review letter of a preliminary version of the CRIR, Gary Stickel, PhD, tribal archaeologist for the Gabrieleno Band of Mission Indians–Kizh Nation, October 17, 2018.
- Two maps and other information, provided by Andrew Salas, Tribal Chairman, Gabrieleno Band of Mission Indians–Kizh Nation, in consultation with the City of Torrance in October 2018. The maps are public record and are described in this section. Per SB 18, the context of the email correspondence between Mr. Salas and the City during the course of consultation is confidential and is available to qualified professionals at the City of Torrance Planning Division (See SB 18 §1(b)(3), (Burton, Ch. 905, Stat. 2004); Govt. Code §§ 65040.2(g)(3), 65352.3, 65352.4, and 65562.5).

Copies of the review letter from Dr. Stickel is in the technical appendix of this DEIR (Appendix K1).

5.13.1 Environmental Setting

5.13.1.1 REGULATORY BACKGROUND

Federal and state laws, regulations, plans, or guidelines that are related to protection and preservation of tribal cultural resources and applicable to the proposed project are summarized below.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items, such as human remains, funerary objects, sacred objects, or objects of cultural patrimony to lineal descendants and culturally affiliated Indian tribes.

Public Resources Code

Archaeological resources are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code (PRC). In addition, cultural resources are recognized as nonrenewable resources and therefore receive protection under the PRC and CEQA.

- **PRC Sections 5097.9–5097.991** provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the Native American Heritage Commission (NAHC).

These sections also require notification to descendants of discoveries of Native American human remains and provide for treatment and disposition of human remains and associated grave goods.

Health and Safety Code

The discovery of human remains is regulated by California Health and Safety Code Section 7050.5:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation…until the coroner…has determined…that the remains are not subject to…provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible…. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and…has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Assembly Bill 52

The Native American Historic Resource Protection Act (AB 52) took effect July 1, 2015, and incorporates tribal consultation and analysis of impacts to tribal cultural resources (TCR) into the CEQA process. It requires TCRs to be analyzed like any other CEQA topic and establishes a consultation process for lead agencies and California tribes. Projects that require a Notice of Preparation of an EIR or Notice of Intent to adopt a ND or MND, on or after July 1, 2015, are subject to AB 52. A significant impact on a TCR is considered a significant environmental impact, requiring feasible mitigation measures.

TCRs must have certain characteristics:

1. Sites, features, places, cultural landscapes (must be geographically defined), sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources. (PRC Section 21074(a)(1))
2. The lead agency, supported by substantial evidence, chooses to treat the resource as a TCR. (PRC Section 21074(a)(2))

The first category requires that the TCR qualify as a historical resource according to PRC Section5020.1. The second category gives the lead agency discretion to qualify that resource under PRC Section 5024.1—under the conditions that it supports its determination with substantial evidence and considers the resource's significance to a California tribe. The following is a brief outline of the process (PRC Sections 21080.3.1–3.2).

1. A California Native American tribe asks agencies in the geographic area with which it is traditionally and culturally affiliated to be notified about projects. Tribes must ask in writing.
2. Within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it.
3. A tribe must respond within 30 days of receiving the notification if it wishes to engage in consultation.

4. The lead agency must initiate consultation within 30 days of receiving the request from the tribe.
5. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a TCR, OR a party, after a reasonable effort in good faith, decides that mutual agreement cannot be reached.
6. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on TCRs and discuss feasible alternatives or mitigation that avoid or lessen the impact.

Senate Bill 18

Prior to the enactment of SB 18 (California Government Code Sections 65352.3 et seq.) related to traditional tribal cultural places (TTCP) in 2004, state law provided limited protection for Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries; religious and ceremonial sites; shrines; burial grounds; prehistoric ruins; archaeological or historic sites; Native American rock art inscriptions; or features of Native American historic, cultural, and sacred sites.

SB 18 placed new requirements upon local governments for developments within or near TTCP. SB 18 requires local jurisdictions to provide opportunities for involvement of California Native Americans tribes in the land planning process for the purpose of preserving traditional tribal cultural places. The Final Tribal Guidelines recommends that the NAHC provide written information as soon as possible but no later than 30 days to inform the lead agency if the proposed project is determined to be in proximity to a TTCP and another 90 days for tribes to respond to if they want to consult with the local government to determine whether the project would have an adverse impact on the TTCP. There is no statutory limit on the consultation duration. Forty-five days before the action is publicly considered by the local government council, the local government refers action to agencies, following the CEQA public review time frame. The CEQA public distribution list may include tribes listed by the NAHC who have requested consultation, or it may not. If the NAHC, the tribe, and interested parties agree upon the mitigation measures necessary for the proposed project, it would be included in the project's EIR. If both the lead agency and the tribe agree that adequate mitigation or preservation measures cannot be taken, then neither party is obligated to take action.

SB 18 requires a city or county to consult with the NAHC and any appropriate Native American tribe prior to the adoption, revision, amendment, or update of a city's or county's general plan. While SB 18 does not specifically mention consultation or notice requirements for adoption or amendment of specific plans, the Final Tribal Guidelines advises that SB 18 requirements extend to specific plans as well, because state planning law requires local governments to use the same process for amendment or adoption of specific plans as general plans (defined in Government Code Section 65453). In addition, SB 18 provides a new definition of TTCP that requires a traditional association of the site with Native American traditional beliefs, cultural practices, or ceremonies or the site must be shown to actually have been used for activities related to traditional beliefs, cultural practices, or ceremonies. Previously, the site was defined to require only an association with traditional beliefs, practices, lifeways, and ceremonial activities. In addition, SB 18 law amended Civil Code Section 815.3 and added California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

5.13.1.2 EXISTING CONDITIONS

Cultural Chronology

Humans have lived in southern California for at least 10,000 years (Paleo Solutions, 2018). This time span is divided into the Early Period (8,000 to 6,000 years BC), the Milling Stone Period (6,000 to 1,000 BC.), the Intermediate Period (1,000 BC to AD 1000), and the Late Prehistoric Period (AD 1000 to 1779). Different patterns and types of material culture represent each of these periods.

Large projectile points from the Early Period indicate subsistence on large animals. The diet likely also included smaller game and harvested plants. Sites representing this period have been found mostly inland at prehistoric lakebeds in the Mojave Desert and San Joaquin Valley.

The Milling Stone Period is characterized by milling stones used in the preparation of plant- and seed-based foods. Terrestrial game supplemented the diet during this time but did not include coastal resources.

During the Intermediate Period, subsistence expanded to foods from the ocean and a greater diversity of plant foods. Tools used during this period included mortars and pestles to process plant-based foods.

During the Late Prehistoric Period, semi-permanent villages were established. The diet was mainly terrestrial and maritime animals, supplemented by some plant foods, including acorns. Larger villages served as trade centers. Shell beads were introduced as currency for the exchange of goods, which was supported by a strong artistic tradition in bone, shell, stone, and basketry.

Ethnography

The project is in an area historically occupied by the Gabrieleno. At the time of European contact, the Gabrieleno inhabited the Los Angeles basin and Santa Catalina, San Nicolas, and San Clemente islands.

The Gabrieleno are descended from a Takic-speaking, Uto-Aztecan group that likely entered the Los Angeles Basin from the east or northeast. The Gabrieleno are thought to have lived in the region for between 1,500 to more than 4,000 years before present (BP). It has been proposed that Uto-Aztecan speakers displaced the local occupants of the southern coast, represented by the Hokan-speaking Diegueño to the south and the Chumash to the north.

The Gabrieleno lived in an area that covered more than 1,500 square miles and included the watersheds of the Los Angeles River, San Gabriel River, Santa Ana River, and Rio Hondo, as well as the southern Channel Islands. There were at least 50 residential communities or villages, each with 50 to 150 individuals. Each community consisted of one or more lineages associated with a permanent territory. Each territory was represented by a permanent central settlement, with associated hunting, fishing, gathering, and ritual areas. A typical settlement would have had a variety of structures used for daily living, recreation, and rituals. Sweathouses, cemeteries, and clearings for dancing and playing were also common at larger settlements.

The Gabrieleno's diet included animals such as mule deer, pronghorn, rabbits, small rodents, freshwater and marine fish and shellfish, sea mammals, snakes, lizards, insects, quail, and mountain sheep; and plants including

native grass seeds, pine nuts, acorns, berries, and fresh greens and shoots. The Gabrieleno were among the most materially wealthy groups in California due to a complex trade network with neighboring groups.

The Gabrieleno made various cultural objects, including beads, baskets, bone and stone tools and weapons, shell ornaments, wooden bowls and paddles, and steatite ornaments and cooking vessels. These items were also traded regularly with neighboring groups.

Like many other Native American groups, the settlement of Europeans in California brought conflict and disease as the Spanish colonized the west coast, decimating the Native American population. Today, the Gabrieleno continue their traditions in Southern California, with approximately 2,000 individuals.

Tribal Cultural Resources

Andrew Salas, Chairman of the Gabrieleno Band of Mission Indians/Kizh Nation, pointed out during consultation with the City that the project site is close to a Native American trade route depicted on a 1938 map of historic sites, highways, and battlefields in Los Angeles County (Kirkman 1938). Mr. Salas also provided a 1962 map of Gabrielino-Kizh archaeological sites showing numerous archaeological sites on and near the Palos Verdes Peninsula, including several within approximately a three-mile radius of the project site.[1,2]

No tribal cultural resources were identified on or within 0.5 mile of the project site by the Cultural Resources Investigation Report or by Mr. Salas in his letter or by any other consultation source.

5.13.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:[3]

TCR-1

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1,

[1] Archaeological sites within approximately 3 miles of the project site were identified by superimposing the map over Google Earth Pro.
[2] Information provided by Native American tribal representatives during consultation is generally confidential. Both maps referenced above and provided by Mr. Salas are public record: the 1938 map is on the Los Angeles Public Library's website; and the 1962 map is in a book, an excerpt of which is on the City of Los Angeles Department of City Planning's website. Therefore, both maps are mentioned here.
[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

the lead agency shall consider the significance of the resource to a California Native American tribe.

5.13.3 Environmental Impacts

5.13.3.1 METHODOLOGY

The Cultural Resources Investigation for the proposed project consisted of a records search at the South Central Coastal Information Center at California State University Fullerton; an intensive foot survey of the development site; and preparation of the investigation report.

5.13.3.2 CONSULTATION PROCESS

AB 52 Consultation

At the time Tribal consultation had been initiated, two tribal entities, the Soboba Band of Luiseno Indians and Torres Martinez Desert Cahuilla Indians, had requested notification under AB52. The City of Torrance sent notification letters respecting the proposed project to the NAHC and following tribal representatives on July 18, 2017.

- Joseph Ontiveros, Director, Cultural Resources Department, Soboba Band of Luiseno Indians, San Jacinto, California
- Michael Mirelez, Cultural Resource Coordinator, Torres Martinez Desert Cahuilla Indians, Thermal, California

The City did not receive responses to either of those letters as of the date of this DEIR.

SB 18 Consultation

In addition to the AB 52 notification letters, the City sent SB 18 consultation letters to the NAHC and representatives of the Native American contacts provided by the NAHC on December 10, 2017. The intent of the consultations was to provide an opportunity for interested Native American contacts to work together with the City during the project planning process to identify and protect tribal cultural resources. Letters were sent to the following Tribes:

SB 18

- Anthony Morales, Chairperson, Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrielino/Tongva Nation
- Robert F. Dorame, Tribal Chair/Cultural Resources, Gabrielino Tongva Indians of California Tribal Council
- Andrew Salas, Chairman, Gabrieleño Band of Mission Indians – Kizh Nation
- Charles Alvarez, Gabrielino-Tongva Tribe
- David Singleton, Program Analyst, Native American Heritage Commission

Andrew Salas, Chairman of the Gabrieleno Band of Mission Indians–Kizh Nation, requested consultation with the City of Torrance respecting tribal cultural resources potentially on or near the site in a letter to the City dated December 15, 2017 in response to the SB 18 Notification Letter; the letter is included in Appendix K2 to this DEIR. Mr. Salas consulted with the City in October 2018. During this consultation, Mr. Salas also asked to be included in the City's official AB 52 notification list.

Gary Stickel, PhD, tribal archaeologist for the Gabrieleno Band of Mission Indians–Kizh Nation, wrote a letter dated October 17, 2018, commenting on the Cultural Resources Investigation Report to Andrew Salas; that letter is included as Appendix K1 to this DEIR. A response to this letter was prepared and the Cultural Resources Investigation Report was revised in response to Gary Stickel's letter.

Mr. Salas provided the City with two maps during consultation; the maps are public record and are described in this section. However, the content of the email correspondence between Mr. Salas and the City during consultation is confidential and is available to qualified professionals at the City of Torrance Planning Division(See SB 18 §1(b)(3), (Burton, Ch. 905, Stat. 2004); Govt. Code §§ 65040.2(g)(3), 65352.3, 65352.4, and 65562.5).

5.13.3.3 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.13-1: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource 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); or of such resource determined by the City of Torrance to be significant pursuant to criteria in Public Resources Code section 5024.1(c). [Threshold TCR-1]

The project site is close to a Native American trade route identified by Andrew Salas during consultation between the Gabrieleno Band of Mission Indians–Kizh Nation and the City of Torrance. Mr. Salas also provided a map showing several Native American archaeological sites within approximately three miles of the project site. Archaeological resources buried in site soils prior to the mining would most likely have been in the top 5 to 10 feet of soil. A review of the historic maps indicates that between 75 to 311 feet of the top original sediments of the project are were removed during mining operations. The artificial fill is present up to approximately 80 feet deep. Any archaeological resources that were buried in soil that was disturbed by mining would have been destroyed. However, project development could involve some disturbance of remaining native soils onsite. Project development could also damage tribal cultural resources on the surface that may not have been identified by the Cultural Resources Investigation field survey. Therefore, project impacts to tribal cultural resources would potentially be significant.

5.13.4 Cumulative Impacts

The area considered for cumulative impacts is the City of Torrance. Several prehistoric archaeological sites have been identified in or adjacent to the City of Torrance, described above in Section 5.13.1.2. Thus, other projects

involving ground disturbance could potentially damage tribal cultural resources. The City of Torrance would notify tribal representatives who had requested notification of projects in the City. The City would consult with representatives requesting consultation regarding tribal cultural resources potentially present on or near those project sites. Where representatives identified resources that could be impacted by the affected developments, the City would require implementation of feasible mitigation measures to reduce such impacts. Cumulative impacts would thus be less than significant, and project impacts would not be cumulatively considerable.

5.13.5 Existing Regulations and Standard Conditions

- United States Code, Title 25, Sections 3001 et seq.: Native American Graves Protection and Repatriation Act
- California Public Resources Code Sections 5097.9–5097.99
- California Government Code Sections 65352.3 et seq. (Senate Bill 18).
- California Public Resources Code Sections 21073 et seq. (Assembly Bill 52).

5.13.6 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant:**

- Impact 5.13-1 Project development could damage tribal cultural resources.

5.13.7 Mitigation Measures

Mitigation measures listed below have been developed from responses from SB18 tribal consultation responses and input.

Impact 5.13-1

TCR-1 **Retain a Native American Monitor/Consultant.** The project applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians–Kizh Nation Tribal Government and is listed under the Native American Heritage Commission's (NAHC) Tribal Contact list for the area of the project location. The monitor/consultant will only be present on-site during the construction phases that involve ground-disturbing activities. Ground-disturbing activities are defined by the Gabrieleño Band of Mission Indians–Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal representatives and monitor/consultant have indicated that the site has a low potential for impacting tribal cultural resources.

TCR-2 **Unanticipated Discovery of Tribal Cultural and Archaeological Resources.** Upon discovery of any archaeological resources, the project construction contractor shall cease construction activities in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians–Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians–Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request reburial or preservation for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, mitigation takes place. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," the project applicant must allot time and funding sufficient for implementation of avoidance measures or removal of the resource(s).

TCR-3 **Preservation in Place.** Preservation in place (i.e., avoidance) is the preferred manner of treatment for unique archaeological resources pursuant to Public Resources Code Section 21083.2(b). If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum at the University of California Los Angeles, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to a local school or historical society for educational purposes.

TCR-4 **Unanticipated Discovery of Human Remains and Associated Funerary Objects.** Native American human remains; that is, an inhumation or cremation in any state of decomposition or skeletal completeness, and funerary objects, or associated grave goods, shall both be treated according to California Public Resources Code Section 5097.98. Any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC), in accordance with California Health and Safety Code Section 7050.5.

TCR-5 **Resource Assessment and Continuation of Work Protocol:** Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be

Native American, the coroner will notify the NAHC as mandated by state law, who will then appoint a Most Likely Descendent (MLD).

TCR-6 **Kizh-Gabrieleno Procedures for burials and funerary remains.** If the Gabrieleno Band of Mission Indians–Kizh Nation is designated MLD, the following treatment measures shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. These remains are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. If a tribe other than the Kizh Nation is identified as the MLD, as determined by the NAHC, the same procedures shall be followed pertaining to that tribal entity, if applicable.

TCR-7 **Treatment Measures.** Prior to the continuation of ground-disturbing activities, the land owner shall arrange a designated site within the project footprint for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe shall work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically, and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or invasive investigation of human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects, and objects of cultural patrimony will be removed to a secure container on-site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

TCR-8 **Professional Standards.** Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The qualified archaeologist shall ensure that all other personnel are appropriately trained and qualified.

5.13.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.13.9 References

Kirkman, George. 1938. Principal Historic Sites, Highways, and Battle-Fields in Old Los Angeles County. Accessed from Los Angeles Public Library website. https://www.lapl.org/sites/default/files/visual-collections/maps/map0001.jpg.

Paleo Solutions, Inc., 2018, November 12. Cultural Resources *Investigation* Report (CRIR) for the Solana Residential Development Within the City of Torrance, Los Angeles County, California.

Torrance, City of. 2009, July. Cultural Resources. Section 5.4 of the City of Torrance General Plan Update Draft EIR.

5. Environmental Analysis
TRIBAL CULTURAL RESOURCES

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5.14 UTILITIES AND SERVICE SYSTEMS

This section of the DEIR evaluates the potential for implementation of the Solana Residential Development Project to impact wastewater conveyance and treatment; water supplies, treatment, and conveyance; and solid waste disposal in the community of Torrance. The CEQA Guidelines Update effective December 2018 added an Energy section, including two thresholds, to the Environmental Checklist Form (CEQA Guidelines Appendix G); Energy is addressed in this Section.

Storm drainage systems are not addressed in this Section pursuant to the aforesaid CEQA Guidelines Update; storm drainage systems are addressed in Section 5.8, *Hydrology and Water Quality*, of this DEIR.

The analysis in this section is based, in part, upon questionnaire responses by service providers of the project area and the following technical report:

- Hydraulic Network Analysis for Fire and Domestic Water Service, KHR Associates, October 1, 2018
- Solana Torrance, Sewer Area Study, KHR Associates, December 30, 2017
- Written response to Stormwater service questionnaire by Ted Symons, Associate Civil Engineer, Torrance Community Development Department, May 23, 2017
- Written response to Water service questionnaire by Michael Ritchey, Associate Civil Engineer, Torrance Community Development Department, June 8, 2017.
- Written response to Wastewater service questionnaire by Los Angeles County Sanitation District, May 31, 2017

Complete copies of the questionnaire responses and technical reports are included in the Technical Appendices to this DEIR (Appendices L1, L2 ,L3, L4, and L5).

Ten comments relating utilities and service systems were received in response to the Initial Study (IS)/Notice of Preparation (NOP) circulated for the proposed project, primarily regarding the potential impacts on the increase consumption of water and other utilities. Concerns were also received regarding the aging infrastructure in the City. The potential impacts of the utilities and services systems in the City have been analyzed in this section.

5.14.1 Wastewater Treatment and Collection

5.14.1.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Clean Water Act

The federal Clean Water Act (CWA), United States Code, Title 33, Sections 1251 et seq., established regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters. Under the CWA, the US Environmental Protection Agency (EPA) is authorized to set wastewater standards for industry and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that generate discharges directly into waters of the United States. Additionally, Sections 1251 et seq. of the CWA require wastewater treatment of all effluent (or sewage and wastewater) before it is discharged into surface waters.

Local

Los Angeles Regional Water Quality Control Board

Waste discharge requirements pursuant to NPDES regulations for the Sanitation Districts of Los Angeles County (LACSD) water reclamation plant (WRP) treatment of wastewater from the proposed project area—the Joint Water Pollution Control Plant (JWPCP) in the City of Carson—are set forth in Los Angeles Regional Water Quality Control Board (RWQCB) Order No. R4-2017-0180, issued in 2017. This order sets discharge prohibitions—e.g., high-level radiological wastes or discharges that degrade water supplies—and effluent limitations and discharge specifications.

Sanitation Districts of Los Angeles County

Capital improvements to the LACSD water reclamation plants are funded from connection fees charged to new developments, redevelopments, and expansions of existing land uses. The connection fee is a capital facilities fee used to provide additional conveyance, treatment, and disposal facilities (capital facilities) required by new users connecting to the LACSD's sewerage system or by existing users who significantly increase the quantity or strength of their wastewater discharge. The Connection Fee Program ensures that all users pay their fair share for any necessary expansion of the system. Estimated wastewater generation factors used in determining connection fees in LACSD's 22-member districts are set forth in the Connection Fee Ordinance for each respective district, available on LACSD's website. The project site is in District 5 of the Sanitation Districts (LACSD 2015).

LACSD establishes discharge limits for wastewater discharges within its service areas to prevent discharge of substances to LACSD sewers that would exceed the treatment capacities or otherwise damage LACSD water reclamation facilities (LACSD 2018a). The discharge limits enable water reclamation facilities to maintain their effluents within Los Angeles RWQCB wastewater discharge requirements. The LACSD has an industrial

pretreatment program where industries exceeding discharge limits pretreat liquid wastes before discharging them to sewers.

Existing Conditions

Existing Wastewater Generation and Wastewater Treatment Facilities

Existing wastewater generation is nonexistent due to the undeveloped nature of the project site. LACSD provides wastewater treatment for the project site at its JWPCP in the City of Carson. The JWPCP provides primary and secondary treatment for an average of 260 million gallons per day (mgd) of wastewater from the Los Angeles region. The plant has a total permitted capacity of 400 mgd and is the largest of LACSD's treatment plants (LACSD 2018b).

The influent to JWPCP is treated by bar screens, grit chambers, sedimentation tanks, anaerobic digesters, biological reactors, clarifiers, dissolved air flotation, and cryogenic oxygen. Bleach is injected into the effluent for final disinfection (LACSD 2018b).Treated effluent is discharged into the ocean through two outfalls that extend one and a half miles into the ocean, 200 feet below sea level. This effluent is discharged by gravity or using pumps totaling 170 mgd capacity.

Sewers

The City of Torrance owns, operates, and maintains 85 percent of the sewer system in the City. The remaining 15 percent of the system is owned, operated, and maintained by the LACSD. Most of the City's sewer system consists of 8-inch vitrified clay pipe (VCP) and wastewater generated from the project site would be conveyed into the JWPCP in the City of Carson.

New sewer connections to the development are proposed to be connected to the existing 8-inch VCP sewer main in Via Valmonte at an existing sewer manhole. According to the 14-day continuous sewer flow monitoring study performed by KHR Associates, the maximum flow capacity of the sewer mains, to which the proposed project will be connected to, ranges from 0.431 cubic feet per second (cfs) to 1.00 cfs.

5.14.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:[1]

U-1 Would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

[1] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018. Threshold related to exceeding wastewater treatment requirements of the applicable Regional Water Quality Control Board was deleted from the CEQA Guidelines Appendix G in the CEQA Guidelines Update.

U3 Would result in a determination by the wastewater treatment provider which serves or may serve the project that has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.14.1.3 PLANS, PROGRAMS, AND POLICIES

The following regulatory requirements are measures outlined governing solid waste, water, and wastewater, to ensure utility infrastructure conditions and improvements comply with all applicable codes and policies during project development.

Regulatory Requirements

RR USS-1 The proposed project will be designed, constructed, and operated in accordance with the LACSD's Wastewater Ordinance. All wastewater discharges into LACSD facilities shall be required to comply with the discharge standards set forth to protect the public sewage system.

RR USS-2 The project's sewer, storm drain, and other utility infrastructure improvements will be designed, constructed, and operated in accordance with the applicable regulations in the Los Angeles County Code, which incorporates by reference the California Building Code, the California Electrical Code, the California Mechanical Code, the California Plumbing Code, the California Fire Code, and the Green Building Standards Code.

RR HAZ-1 Any project-related hazardous materials and hazardous wastes will be transported to and/or from the project in compliance with any applicable State and federal requirements, including the U.S. Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation (Caltrans) standards; and the California Occupational Safety and Health Administration (Cal/OSHA) standards.

RR HAZ-2 Any project-related hazardous waste generation, transportation, treatment, storage, and disposal will be conducted in compliance with the Subtitle C of the Resource Conservation and Recovery Act (RCRA) (Code of Federal Regulations, Title 40, Part 263), including the management of non-hazardous solid wastes and underground tanks storing petroleum and other hazardous substances. The project will be designed and constructed in accordance with the regulations of the Los Angeles County Fire Department, which serves as the designated Certified Unified Program Agency (CUPA) and which implements State and federal regulations for the following programs: (1) Hazardous Waste Generator Program, (2) Hazardous Materials Release Response Plans and Inventory Program, (3) California Accidental Release Prevention (CalARP) Program, (4) AST Program, and (5) UST Program.

RR HYD-2 The project will be constructed and operated in accordance with the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075 and Order R4-2012-0175-A01. The MS4 Permit requires new development and redevelopment projects to retain on-site a specified volume of stormwater runoff from a design storm event. The Low Impact

Development Standards Manual provides the guidance on how new development and redevelopment projects can meet these on-site retention requirements through the use of stormwater quality control measures.

5.14.1.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-1: Project-generated wastewater could be adequately treated by the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, but require infrastructure improvements. [Thresholds U-1 (partial), and U-3]

Impact Analysis: As described in Chapter 3, *Project Description*, of this DEIR, the proposed project would involve construction of 248 apartment units in three 5-story buildings, parking structure, and community room/gym. Development would also include construction of sewers connecting to an existing eight-inch sewer main in Via Valmonte.

Wastewater Generation

As shown in Table 5.14-1, *Projected Wastewater Generation*, the anticipated daily wastewater generation onsite is estimated to be 0.078 cubic feet per second (cfs) and a peak flow of 0.26 cfs (KHR, 2017). This estimate is based on typical flow factors for condominiums.

Table 5.14-1 Projected Wastewater Generation

Unit Type	Total Units	Flow Factor (gpd/unit)	Average Daily Flow (gpd)	Average Daily Flow (cfs)	Peak flow (cfs)
One Bedroom Multi-Family	135	195	26,325	0.041	---
Two Bedroom Multi-Family	113	195	22,035	0.034	---
Leasing Office/ Community Center	5,000 SF	600 gpd/SF 200 gpd/SF	2200	0.003	---
Total	**Not applicable**	**Not applicable**	**50,560**	**0.078**	**0.26**

Source: KHR, 2017
SF = square feet

With the anticipated increase of 0.26 cfs in peak flow from the proposed project, the total peak flow will cause the sewer mains in 242nd Street and Hawthorne Boulevard to exceed 50 percent full according to the sewer flow monitoring study as shown in Table 5.14-2, Comparison of Existing and Proposed Sewer Flows to Sewer Capacity (KHR, 2017). Therefore, the existing sewer mains are undersized and will require improvements to accommodate the increase. Sewers will need to be upsized to a 12" VCP.

Table 5.14-2 Comparison of Existing and Proposed Sewer Flows to Sewer Capacity

Manhole Location	Existing Peak Flow (cfs)	Proposed Peak Flow (cfs)	Total Peak Flow (cfs)	Existing Flow Capacity* (cfs)
Newton Street	0.030	0.26	0.290	0.649
Park Street	0.063	0.26	0.323	0.98
Alley between Park Street and Hawthorne Boulevard	0.180	0.26	0.440	0.72
Hawthorne Boulevard at 242nd Street	0.323	0.26	0.583	0.431

Source: KHR, 2017
*=numbers shown represent capacity at 50 percent

The project includes the upsizing from an 8-inch to a 12-inch line for 163 linear feet at the 242nd Street segment of the sewer system from the alley to Hawthorne Boulevard and for 259 linear feet in Hawthorne Boulevard from 242nd Street to Pacific Coast Highway. The total upsize length is 422 linear feet. With this upsizing, the lines would be sufficient to convey the anticipated generation of wastewater. Without the implementation of infrastructure improvements, impacts would be potentially significant due to flow capacity deficiency.

The nearest 12-inch LACSD Madison Street Trunk Sewer located in Hawthorne Boulevard at Pacific Coast Highway has a capacity of 4.6 cfs and conveyed a peak flow of 0.5 cfs when last measured in 2011 (KHR 2017). The average daily increase in wastewater flow estimated for the proposed project—0.078 cfs—is 1.7 percent of the design capacity of the 12-inch trunk sewer and the proposed project together with the existing flow is estimated to generate 45 percent of total sewage flow. Therefore, project flows are well within the design capacity of the existing trunk sewer line. Additionally, LACSD has a system in place to effectively monitor and account for proposed sewer demand changes related to general plans, specific plans, and individual projects. Potential impacts to LACSD facilities would be less than significant.

Wastewater Treatment

Wastewater generated by the project would be treated at JWPCP, which has a design capacity of 400 mgd. JWCP treats approximately 260 mgd of wastewater per day which leaves a remaining capacity of 140 mgd. The projected average daily peak wastewater flow generated by the project at buildout—168,042 gpd—would only represent 0.04 percent of the facility's design capacity and 0.12 percent of its remaining capacity. The proposed project would not have a significant impact on JWPCP's ability to treat wastewater in the area. Impacts related to wastewater treatment would be less than significant.

Regional Water Quality Control Board Wastewater Discharge Requirements

As required under regulatory requirement RR USS-1, the proposed project would comply with LACSD discharge requirements—using industrial pretreatment where needed—and JWPCP operations would comply with Los Angeles RWQCB Order No. R4-2017-0180. Regulatory requirements RR HAZ-1 and HAZ-2 require compliance with state and federal regulations governing transport and disposal of hazardous materials, and thus are also pertinent to discharge limits for sewers. Compliance with these regulatory requirements would ensure wastewater generated by project buildout would comply with existing wastewater discharge requirements of the Los Angeles RWQCB.

5.14.1.5 CUMULATIVE IMPACTS

Wastewater Treatment Capacity

The proposed project along with cumulative projects would result in an increase in demand for wastewater conveyance and treatment. The area considered for cumulative impacts is the service area of the JWPCP, which is owned and operated by the LACSD. The JWPCP serves approximately 3.5 million people in the southern and eastern parts of the Los Angeles Basin (LACSD 2018cb). The capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Population growth would increase wastewater generation and the population in Los Angeles County is expected to increase by 11 percent from 2017-2035, as shown in Table 5.14-3, *Projected Cumulative Wastewater Treatment Demand Joint Water Pollution Control Plant*. The estimated growth in the JWPCP's service area is pro-rated from estimated growth in Los Angeles County. Wastewater flows through the JWPCP are projected to increase to 285 mgd in 2035 in proportion to estimated population growth in Los Angeles County over the 2017-2035 period. The JWPCP currently has a 400 mgd capacity and produces an average recycled water flow of 253.4 mgd. Therefore, there is sufficient wastewater treatment capacity in the region to accommodate the projected future growth. Cumulative impacts to wastewater treatment capacity would be less than significant.

Table 5.14-3 Projected Cumulative Wastewater Treatment Demand Joint Water Pollution Control Plant

JWPCP wastewater flows, 2017	Los Angeles County population				JWPCP Projected Wastewater Flows for 2035
	Estimate for January 2017, CDF	Projection for 2035, SCAG	Increase for 2017-2035	Percent Increase, 2017-2035	
256.8 mgd	10,231,271	11,353,000	1,121,729	11%	285 mgd

Sources: LACSD 2018c; CDF 2018; SCAG 2012.

Cumulative impacts related to wastewater conveyance depend on the location and size of the project as well as phasing. In addition to the proposed project, a new mixed-use project, anticipated to have 11 condominiums and 2,525 square feet of commercial space, is proposed at the northwest corner of Via Valmonte and Hawthorne Boulevard, which would add an additional 0.0052 cfs of peak flow at buildout. With the additional increase of peak flow from the proposed mixed-use project along with the peak flow of 0.26 cfs from the proposed Project, the peak flow of the Trunk Sewer located in Hawthorne Boulevard at Pacific Coast Highway—0.5 cfs—is still adequate. All future development within the City of Torrance and the LACSD service area would be reviewed on a project-by-project basis to verify that existing capacity exists to convey the wastewater generated with the new development. Future cumulative projects developed in accordance with the County's General Plan would also be required to comply with LACSD discharge limits and Los Angeles RWQCB waste discharge requirements. In addition, development projects would be subject to payment of fees prior to connecting to the LACSD's facilities. Therefore, adherence to these regulatory requirements would reduce cumulative impacts related to wastewater conveyance to be less than significant.

Sewers

Impacts of buildout under the proposed project to sewers would be limited to sewers in and near the project site. LACSD would require future projects to prepare sewer capacity studies to determine whether sewer

upgrades are needed. Therefore, impacts of the proposed project would not combine with impacts of other cumulative development projects in Los Angeles County, or with impacts of development projects in LACSD's service area outside the County. Cumulative impacts to sewer would be less than significant.

5.14.1.6 EXISTING REGULATIONS AND STANDARD CONDITIONS

This analysis assumes compliance with all applicable laws. The following codes, rules, and regulations pertaining to wastewater conveyance and treatment were described in detail in Section 5.14.1.1 of this DEIR and are listed below.

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act

Regional

- Los Angeles Regional Water Quality Control Board: Order No. R4-2017-0180
- LACSD District 22, Connection Fee Ordinance

5.14.1.7 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.14-1 Wastewater generated from Project development would be sufficiently treated by the Sanitation Districts of Los Angeles County's wastewater conveyance systems; however infrastructure improvements are required

5.14.1.8 MITIGATION MEASURES

Impact 5.14-1

USS-1 Prior to the issuance of grading permits for the proposed Project, the project applicant shall prepare and submit Sewer Plans showing the needed upsizing improvements of sewer mains for review and approval by the Los Angeles County Department of Public Works and the Los Angeles County Sanitation Districts. An increased capacity sewer trunk line of 12 inches is required to adequately accommodate new uses of the proposed project. The 12-inch line will replace 163 linear feet of 8-inch pipe in 242nd Street from the alley to Hawthorne Boulevard and 259 linear feet of 8-inch pipe Hawthorne Boulevard from 242nd Street to Pacific Coast Highway. When connecting an 8-inch or larger connection to a Districts' trunk sewer, submittal of Sewer Plans to the District for approval and review is required. The project applicant shall also provide a conditional "will serve" letter from the District, evidencing that upon compliance with all rules and regulations, there will be available trunk sewer and treatment plant capacities for the proposed Project. The project applicant shall then provide a final "will serve" letter from the District to the City of Torrance, confirming that all conditions set forth in the conditional "will serve" letter have been satisfied.

5.14.1.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The mitigation measure identified above would reduce potential impacts associated with utilities and service systems to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to wastewater remain.

5.14.2 Water Supply and Distribution Systems

Information on existing and proposed water lines in and/or near the site is from the Hydraulic Network Analysis for Fire & Domestic Water Service, Solana Terrace, by KHR Associates dated October 1, 2018. A complete copy of this report is included as Appendix L1 to this DEIR.

5.14.2.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Clean Water Act

The federal Clean Water Act establishes regulatory requirements for potable water supplies, including criteria for raw and treated water quality. The California Water Service Company, Dominguez District the water purveyor for the project site – is required to monitor water quality and conform to the CWA.

Safe Drinking Water Act

The federal Safe Drinking Water Act sets standards for drinking water quality and is enforced by the EPA, who oversees the states, localities, and water suppliers that implement those standards. The Safe Drinking Water Act protects drinking water and its sources, which include rivers, lakes, and groundwater.

State

Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983 requires water management planning for large suppliers of water. The threshold for water management plans is 3,000 acre-feet annually (2.6 mgd) OR supplying more than 3,000 customers. Under this rule, water providers are required to:

- Prepare a plan that assesses source water sustainability and reliability over expected water demand growth in 5-year increments for a minimum of 20 years future planning.
- Prepare a plan for water supply in future years under the following conditions: normal, one year drought, and multiple year drought. Water sources must be able to supply the water demand in all conditions.
- Provide a plan to implement conservation measures by customers.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act—collectively, Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319—passed in 2014 and defines sustainable groundwater measures. The legislation provides guidance for groundwater management and identifies the undesirable results of groundwater withdrawal. The plan is intended to ensure sustainability measures are used in all groundwater activities such as pumping and intentional recharge.

Water Conservation Plan

The 20x2020 Water Conservation Plan of 2010 was a byproduct of the Water Conservation Act of 2009. The plan had a threefold effect: 1) established a benchmark of current usage per capita off 2005 baseline data; 2) established an intermediate goal for all water providers to meet by 2015; and 3) established a 20 percent reduction in water usage by 2020.

Senate Bill 407

California Senate Bill 407 of 2009 was enacted to decrease wasteful water usage by homeowners. It requires all noncompliant plumbing fixtures installed before 1994 to be updated with plumbing fixtures that meet current usage standards. Standards for water-conserving plumbing fixtures are set forth in California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) Section 301.1.1. CALGreen is updated triennially; the 2016 CALGreen took effect on January 1, 2017.

Executive Order No. B-40-17

After a five-year extraordinary drought in California from 2011 to 2016, Governor Edmund Brown Jr. issued Executive Order B-40-17 on April 7, 2017, making certain water conservation measures permanent. The measures are largely prohibitions on certain outdoor uses of potable water, including landscape irrigation causing water to flow onto pavement or structures; and use of a hose to wash a motor vehicle unless the hose is fitted with a shut-off nozzle (Brown 2017).

City of Torrance

The City of Torrance Water Conservation and Water Supply Shortage and Sustainability Program (WCP) is set forth in Sections 76.4.010 et seq. of the City's Municipal Code. Regulations regarding landscape irrigation are set forth in the WCP.

Existing Conditions

Water Supplies

Torrance Municipal Water (TMW), a municipal utility, provides water to most of the City including the project site. TMW serves approximately 105,400 residents—that is, about 71 percent of the City's population; its service area is about 16 square miles, or 78 percent of the City of Torrance (Torrance 2016). TMW obtains water from four sources:

- **Imported Water** from northern California via the State Water Project; and from the Colorado River via the Colorado River Aqueduct, both purchased from the Metropolitan Water District of Southern California (MWDSC). TMW is an MWDSC member agency.

- **Groundwater** from the West Coast Subbasin of the Coastal Plain of Los Angeles Groundwater Basin that underlies much of the southwest Los Angeles Basin (see Figure 5.8-3, *West Coast Subbasin*). Water is produced by one well.

- **Brackish groundwater** from the West Coast Subbasin treated by the Goldsworthy Desalter in the City of Torrance. The Goldsworthy Desalter has 5 million gallons per day (mgd) capacity.

- **Recycled water** from the West Basin Municipal Water District (WBMWD)'s Edward Little Water Recycling Facility (ELWRF) in the City of El Segundo. The ELWRF has 40 mgd capacity. Most of the recycled water use in the City of Torrance is by the Torrance Refinery Company; the balance is for landscape irrigation (Torrance 2016).

TMW forecasts that its water supplies will remain constant at about 36,794 acre-feet per year over the 2020-2040 period. Forecast supplies consist of about 52 percent imported water; 15 percent groundwater; 19 percent desalinated groundwater; and 13 percent recycled water.

Water Demands and Water Supply Reliability

TMW water demands were 28,609 af in 2015; and are forecast to increase gradually from 25,443 afy in 2020 to 27,454 afy in 2040. Surplus water supplies in normal year conditions are expected to decline slightly from 11,351 afy in 2020 to 9,340 afy in 2040. TMW forecasts that it will have sufficient water supplies to meet demands in its service area over the 2020-2040 period in normal, single-dry-year, and multiple-dry-year conditions. Water demands over the 2020-2040 period are estimated using an annual population growth estimate of 0.55 percent, which is the annual population growth rate of TMW's service area over the 2000-2015 period (Torrance 2016).

Phased Water Conservation Plan

The City of Torrance WCP is set forth in Sections 76.4.010 et seq. of the City's Municipal Code. The WCP identifies three stages of action:

Level 1: < 15% water supply reduction target

Level 2: 15%-30% water supply reduction target; and

Level 3: > 30% water supply reduction target.

The WCP identifies mandatory water use prohibitions for each stage. Most of the specific prohibitions, especially for Level 1 and Level 2, are on outdoor water uses (Torrance 2016)

Water Treatment

Imported MWD water used in Los Angeles County is treated at three MWDSC treatment plants: the Jensen Treatment Plant in the San Fernando Valley, with 750 mgd capacity; the Weymouth Treatment Plant in the City of La Verne in the San Gabriel Valley, with 520 mgd capacity; and the Diemer Treatment Plant in the City of Yorba Linda in Orange County, with 520 mgd capacity (MWDSC 2018).

The Goldsworthy Desalter in the City of Torrance is described above under *Water Supplies*.

TMW uses chloramines for disinfection of groundwater from its one active well.

Water Conveyance Near the Project Site

Existing water mains next to the project site include a 10-inch main in Hawthorne Boulevard and a 12-inch main in Via Valmonte (KHR 2018).

5.14.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:[2]

U-1 Would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

U-2 Would not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

5.14.2.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-2: Water supply and delivery systems are adequate to meet project requirements. [Thresholds U-1 (partial) and U-2]

Impact Analysis:

Proposed Project Water Demands and Water Supplies

Proposed project water demand was estimated at 88,084 gallons per day (gpd) in the Hydraulic Network Analysis (KHR 2018). TMW estimates that its surplus water supplies will range from 11,351 afy, or about 10.13 mgd, in 2020, to approximately 9,340 afy, or about 8.3 mgd, in 2040. TMW forecasts that it will have sufficient

[2] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

water supplies to meet proposed project water demands, and project development would not require TMW to obtain new or expanded water supplies.

Water Treatment

The three MWDSC water treatment facilities serving Los Angeles and Orange counties have total capacity of about 1.8 billion gallons per day. The Goldsworthy Desalter has 5 mgd capacity. There is sufficient water treatment capacity in the region for estimated proposed project water demands, and project development would not require construction of new or expanded water treatment facilities.

Water Delivery

The Hydraulic Network Analysis (Appendix L1 to this DEIR) included fire flow tests and estimates of water flow rates needed for fire flow and domestic water service. The existing water mains in Via Valmonte and Hawthorne Boulevard have adequate flow rates for fire flow and domestic water service to the proposed project. Project development would not require construction of new or expanded off-site water mains.

5.14.2.4 CUMULATIVE IMPACTS

The area considered for analysis of cumulative impacts to water supplies, water treatment, and water delivery is TMW's service area. The discussion of forecast TMW water supplies and demands above in Section 5.14.2.1 addresses TMW's entire service area and is thus cumulative. TMW forecasts that it will have sufficient water supplies to meet demands in its service area over the 2020-2040 period in normal and dry-year conditions. According to the Urban Water Management Plan, the projected potable demands under the consumption rate of 172 GPCD can be met through 2035 by TMW's anticipated local supply capacity based on a Tier 1 limit of 20,967 from Municipal Water District and production capacities of up to 5,640 acre feet per year and 2,400 acre feet per year from its wells and Goldsworthy Desalter, respectively (Torrance 2016). Recycled water may be utilized to offset non-potable water demands. Some other projects may require expansion of some TMW water mains. Other projects would require independent CEQA review including analysis of impacts of installing off-site infrastructure. Where significant impacts of such installation were identified, implementation of all feasible mitigation measures would be required to reduce those impacts. Cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.14.2.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- United States Code Title 42, Sections 300f et seq.: Safe Drinking Water Act

State

- Senate Bill X7-7 (2009): Water Conservation Act of 2009
- 20x2020 Water Conservation Plan
- Senate Bill 407: California Civil Code Sections 1101.1 et seq.

- Executive Order No. B-40-17

City of Torrance

- Municipal Code Sections 76.4.010 et seq.: Water Conservation and Water Supply Shortage and Sustainability Program

5.14.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, impact 5.14-2 would be less than significant.

5.14.2.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.3 Solid Waste

5.14.3.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State

California Integrated Waste Management Act of 1989

Assembly Bill 939 (Integrated Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

Assembly Bill 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts.

California Solid Waste Reuse and Recycling Act of 1991

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Assembly Bill 341

Assembly Bill 341 (AB 341; Chapter 476, Statutes of 2011) increases the statewide waste diversion goal to 75 percent by 2020, and mandates recycling for commercial and multi-family residential land uses.

Assembly Bill 1826

Assembly Bill 1826 (AB 1826; California Public Resources Code Sections 42649.8 et seq.) requires recycling of organic matter by businesses, and multifamily residences of five of more units, generating such wastes in amounts over certain thresholds. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Multifamily residences are not required to have a food waste diversion program.

Senate Bill 1383

Senate Bill 1383 (SB 1383; California Health and Safety Code Sections 39730.5 et seq.) set targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The law is intended to reduce emissions of methane, a short-lived climate pollutant, from decomposition of organic waste in landfills, for the protection of people in at-risk communities as well as to reduce GHG emissions.

California Green Building Standards Code

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the 2016 California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

City of Torrance

CALGreen is adopted by reference as Sections 813.1.1 et seq. of the City of Torrance Municipal Code.

Existing Conditions

Solid Waste Collection

Private haulers licensed to do business in the City of Torrance collect solid waste from commercial uses and multifamily residences in Torrance. The City of Torrance Sanitation Division collects solid waste from single-family residences in Torrance.

Solid Waste Disposal

In 2017 about 96 percent of the solid waste disposed of from Torrance was sent to five facilities: three landfills and two waste-to-energy facilities (the Southeast Resource Recovery Facility, a recycling and waste-to-energy facility, and the Commerce Refuse-to-Energy Facility). The three landfills are described below in Table 5.14-4, *Landfill Capacity*.

Table 5.14-4 Landfill Capacity

Landfill and Nearest City	Current Remaining Capacity (Cubic Yards)	Maximum Daily Disposal Capacity (tons)	Average Daily Disposal, 2017 (tons)1	Residual Daily Disposal Capacity, tons	Estimated Close Date
Azusa Land Reclamation Azusa	51,512,201	8,000	1,410	6,590	2045
Chiquita Canyon Landfill Castaic	8,617,126	6,000	4,972	1,028	2019
Sunshine Canyon City/County Landfill Sylmar	77,900,000	12,100	6,728	5,372	2037
Total	**138,029,327**	**26,100**	**13,110**	**12,990**	

1 Average daily disposal is based on 300 operating days per year; each landfill is open six days per week except certain holidays.
Sources: LACDPW 2019; CalRecycle 2019a; CalRecycle 2019b; CalRecycle 2019c; CalRecycle 2019d

Solid Waste Diversion

The Southeast Resource Recovery Facility (SERFF) is a recycling and waste-to-energy facility on Terminal Island in the City of Long Beach. The SERFF retrieves recyclable materials from the waste stream and also incinerates solid waste to generate electricity; its maximum permitted throughput is 2,240 tons per day (LACSD 2019; CalRecycle 2019e).

The City of Torrance is a member jurisdiction of the Los Angeles Regional Agency (LARA), a Joint Powers Agency consisting of 18 member cities. Recycling and diversion data are available for LARA but not for the City of Torrance. There are 57 solid waste diversion programs in the LARA member cities including composting; transfer stations and material recovery facilities; household hazardous waste programs; public education programs; recycling; source reduction programs; special waste materials programs such as for tires and scrap metal; and waste-to-energy (CalRecycle 2019f). Compliance with AB 939 is measured in part through comparing target disposal rates with actual disposal rates; actual rates at or below target rates are consistent with AB 939. In 2016, the latest year for which data are available, the target disposal rates for LARA were 6.9

pounds per day (ppd) per resident and 17.5 ppd per employee; actual rates were 5.3 ppd per resident and 13.2 ppd per employee (CalRecycle 2019f), consistent with AB 939.

5.14.3.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:[3]

U-4 Would 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.

U-5 Would not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

5.14.3.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-3: Existing and/or proposed facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations. [Thresholds U-4 and U-5]

Impact Analysis:

Estimated Project Solid Waste Generation

According to Los Angeles CEQA Threshold Guide, residential apartments are estimated to generate about 12.23 pounds per day (ppd) of solid waste (City of Los Angeles 2006). Thus, the proposed 248 units are estimated to generate about 3,033 ppd, or 1.38 tons, of solid waste daily (Torrance 2009). The two landfills and reclamation facility described above in Table 5.14-4 have total residual capacity of nearly 13,000 tons per day. There is sufficient solid waste disposal capacity in the region for estimated project-generated solid waste.

Solid Waste Diversion and Regulatory Compliance

Assembly Bills 939, 341, 1327 and 1826

Assembly Bill 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.

Assembly Bill 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts.

Assembly Bill 1327 (California Solid Waste Reuse and Recycling Act; Public Resources Code 42900-42911) required the Board to approve a model ordinance for adoption by any local government for the transfer, receipt, storage, and loading of recyclable materials in development projects.

Assembly Bill 1826 (California Public Resources Code Sections 42649.8 et seq.), signed into law in September 2014, requires recycling of organic matter by businesses generating such wastes in amounts over certain thresholds. This law also requires that local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily dwellings that consist of five or more units. Multifamily dwellings are not required to recycle food waste including food-soiled paper (CalRecycle 2018). The law took effect in April 2016.

Senate Bill 1383

Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants in various sectors of California's economy. The new law codifies the California Air Resources Board's Short-Lived Climate Pollutant Strategy, established pursuant to SB 605 (Lara, Chapter 523, Statutes of 2014), to achieve reductions in the statewide emissions of short-lived climate pollutants.

The proposed project would include storage areas for storing recyclable materials, in accordance with AB 1327 and AB 939. Project operation would include recycling, in compliance with AB 341and SB 1383, and recycling of organic matter (excepting food waste) in accordance with AB 1826. At least 65 percent of demolition debris would be recycled and/or salvaged in accordance with CALGreen Section 5.408. Impacts would be less than significant.

5.14.3.4 CUMULATIVE IMPACTS

The area considered for cumulative impacts analysis is the City of Torrance, the service area for the City's Sanitation Division. Other projects in the City would increase solid waste generation. The population of the City is forecast to increase by about 13,300, or 9 percent, between 2012 and 2040; while employment in the City is forecast to increase by about 15,300, or 13 percent, in the same period (SCAG 2016). Other projects would comply with regulatory requirements for recyclable materials collection areas such as recycling, including recycling organic matter, and recycling and/or salvaging construction and demolition waste. Cumulative impacts would be less than significant and project impacts would not be cumulatively considerable.

5.14.3.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

Federal

- United States Code Title 42, Sections 6901 et seq.: Resource Conservation and Recovery Act

State

- California Public Resources Code 40050 et seq.: Integrated Solid Waste Management Act of 1989
- Assembly Bill 341 (Chapter 476, Statutes of 2011)
- California Public Resources Code Sections 42649.8 et seq. (Assembly Bill 1826)
- California Health and Safety Code Sections 39730.5 et seq. (Senate Bill 1383)
- Title 24, California Code of Regulations, Part 11 (California Green Building Standards Code), Section 5.408

5.14.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.14-3 would be less than significant.

5.14.3.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.4 Energy

In accordance with Appendix F of the State CEQA Guidelines, this DEIR includes relevant information and analyses that address the energy implications of the proposed project. This section represents a summary of the proposed project's anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the project's energy implications, are discussed in greater detail elsewhere in this DEIR, including Chapter 4, Project Description, and Sections 5.2, Air Quality, 5.6, Greenhouse Gas Emissions, and 5.12, Transportation and Traffic. This section also relies on the results of a CalEEMod estimation of fuel and energy use for construction and operation found in Appendix B1 of this EIR.

5.14.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The Act sets increased Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, appliance energy efficiency standards, building energy efficiency standards, and accelerated research and development tasks on renewable energy sources (e.g., solar energy,

geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration.

State

Renewables Portfolio Standard

The California Renewables Portfolio Standard was established in 2002 under Senate Bill (SB) 1078 and was amended in 2006, 2011, and was most recently amended as SB 100 on September 10, 2018. The program requires investor-owned utilities, electricity service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. SB 100 revised the goal of the program to achieve 50 percent renewable resources by December 31, 2016, and to achieve a 60 percent target by December 31, 2030.

State Alternative Fuels Plan

Assembly Bill (AB) 1007 requires the California Energy Commission (CEC) to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with California Air Resources Board (CARB) and in consultation with other federal, State, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce greenhouse gas (GHG) emissions; and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007) proactively implements this plan (CEC 2007).

Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally and non–federally regulated appliances. California's Appliance Efficiency Regulations (California Code of Regulations [CCR], Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Building Energy Efficiency Standards (CCR Title 24, Part 6)

The Energy Efficiency Standards for Residential and Nonresidential Buildings (24 California Code of Regulations [CCR]] Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission (CEC) adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) "Provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy" and (2) "Respond to Assembly Bill 32, the Global Warming Solutions

Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020". Title 24 Part 6 of the 2013 California Building Standards Code, the 2013 California Energy Code, went into effect on July 1, 2014, and includes energy efficiency updates (CBSC 2015).

Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards went into effect on January 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards, and nonresidential buildings are 5 percent more energy efficient than the 2013 Standards (CEC 2015a). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

Title 24, Part 11, Green Building Standards

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as CALGreen; adopted by reference in Chapter 18.47 [Green Building Standards Code] of the City's Municipal Code) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011. The 2016 CALGreen took effect on January 1, 2017. The CALGreen Code is intended to (1) reduce greenhouse gas emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. The CALGreen Code contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (ICC 2017).

Assembly Bill 1493: Vehicle GHG Emissions

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG

emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Local

City of Torrance Energy Efficiency Climate Action Plan

The City adopted its Climate Action Plan (CAP) in 2017 (Torrance 2015), with the Energy Efficiency chapter being adopted in 2015 with respective GHG inventory and targets for reduction. (Torrance 2015) The CAP serves as the City's community-wide GHG reduction strategy to achieve the state's GHG reduction targets for year 2020 and 2035 to mitigate and streamline future project-level GHG impacts. The CAP sets a target of 1990 levels, or 15 percent reduction below baseline (2005), for 2020 and a target of 49 percent below baseline for year 2035. The interim year 2035 reduction target is used as an indicator to determine the City's progress in meeting the long-term 2050 reduction target of 80 percent below 1990 levels. To achieve these reduction targets, the CAP identifies community and municipal goals and associated strategies outlined in the plan.

Community Energy Efficiency Goals:

- Goal 1: Increase Energy Efficiency (EE) in Existing Residential Units
- Goal 2: Increase Energy Efficiency in New Residential Development
- Goal 3: Increase Energy Efficiency in Existing Commercial Units
- Goal 4: Increase Energy Efficiency in New Commercial Development
- Goal 5: Increase Energy Efficiency through Water Efficiency
- Goal 6: Decrease Energy Demand through Reducing Urban Heat Island Effect

Municipal Energy Efficiency Goals

- Goal 1: Participate in Education, Outreach, and Planning Efforts for Energy Efficiency
- Goal 2: Increase Energy Efficiency in Municipal Buildings
- Goal 3: Increase Energy Efficiency in City Infrastructure
- Goal 4: Reduce Energy Consumption in the Long Term

Existing Conditions

Electricity

Electricity is quantified using kilowatts (kW) and kilowatt-hours (kWh). A kW is a measure of 1,000 watts of electrical power and a kWh is a measure of electrical energy equivalent to a power consumption of 1,000 watts for 1 hour. The kWh is commonly used as a billing unit for energy delivered to consumers by electric utilities. Southern California Edison (SCE) provides electricity in the City of Torrance. SCE's service area spans much

of southern California from Orange and Riverside counties on the south to Santa Barbara County on the west to Mono County on the north (CEC 2015). Total electricity consumption in SCE's service area was 106,080 gigawatt-hours (GWh) in 2015 and is forecasted to increase to 120,780 GWh in 2028 for the mid-demand scenario (CEC 2017); one GWh is equivalent to one million kilowatt-hours. Sources of electricity sold by SCE in 2017 were:

- 32 percent renewable (solar, wind, and geothermal)
- 8 percent large hydroelectric
- 20 percent natural gas
- 6 percent nuclear
- 34 percent unspecified sources – that is, not traceable to specific sources (SCE 2018).

SCE offers Green Rates for those residential and business customers with "bundled" service from SCE—consisting of generation, metering, and other services—under which part or all of the customer's bill amount is used to fund solar energy sources (SCE 2019). The project site does not currently have any electricity energy demands.

Natural Gas

Gas is typically quantified using "therms", which is a unit of heat energy equal to 100,000 British thermal units (Btu) and is the energy equivalent of burning 100 cubic feet of natural gas. The Southern California Gas Company (SCGC) provides natural gas to the project site. SCGC's service area spans much of the southern half of California, from Imperial County on the southeast to San Luis Obispo County on the northwest to part of Fresno County on the north to Riverside County and most of San Bernardino County on the east (CEC 2015). Total natural gas supplies available to SCGC are forecast to remain constant at 3,775 million cubic feet per day (MMCF/Day) from 2015 through 2035. Total natural gas consumption in SoCalGas's service area is forecast to be 2.625 bcfd in 2018 and 2.313 bcfd in 2035 (CGEU 2018). The project site currently does not have any natural gas energy demands.

5.14.4.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines Update approved in December 2018, the proposed project would have a significant impact related to energy consumption if it would:

U-8 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

U-9 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

5.14.4.3 ENVIRONMENTAL IMPACTS

The impact analysis focuses on the three sources of energy that are relevant to the proposed project: electricity, natural gas, and transportation fuel for vehicle trips associated with the new development and its construction. The analysis of electricity/natural gas usage is based on California Emissions Estimator Model (CalEEMod) GHG emissions modeling, which quantifies energy use for occupancy (see Appendix B1).

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-4: Project construction and operation would not cause wasteful, inefficient, or unnecessary energy consumption. Project development would not conflict with a state or local plan for renewable energy or energy efficiency. [Thresholds U-8, U-9]

Impact Analysis:

Short-term Construction Impacts

Construction of the proposed project would require the use of construction equipment for grading, hauling, and building activities. Equipment proposed for these types of activities is listed in Table 5.2-6, *Construction Equipment*, in Section 5.2, Air Quality. Electricity use during construction would vary during different phases of construction—the majority of construction equipment during grading would be gas powered or diesel powered, and the later construction phases would require electricity-powered equipment, such as interior construction and architectural coatings. Construction also includes the vehicles of construction workers traveling to and from the project site and haul trucks for the export of materials from site clearing, demolition and the export and import of soil for grading. Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. Impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure.

The construction contractors are also expected to minimize idling of construction equipment during construction as required by state law (see Section 5.2, Air Quality), and reduce construction and demolition waste by recycling. These required practices would limit wasteful and unnecessary electrical energy consumption. Furthermore, there are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the state. Project construction would involve recycling or salvaging at least 65 percent of construction waste per CALGreen Section 4.408. Therefore, the proposed short-term construction activities would not result in inefficient, wasteful, or unnecessary fuel consumption.

Operation Impacts Electricity

Project operation would use approximately 1,854,031 kWh or 1.85 Giga-watt hour (GWh), as shown in Table 5.14-5, *Estimated Project Electricity Demands*, below. Project demands were calculated assuming energy efficient appliances and lighting would be utilized.[4] Implementation of additional energy efficiency project components could potentially be lower than the calculations presented. The project design would comply with State Building Energy Efficiency Standards, the California Green Building Standards Code and Title 24 Energy Requirements. Southern California Edison (SCE) provides services to the project site. The project applicant shall follow the

[4] All items that are assumed in this DEIR, if not required as mitigation measures, will be included as conditions of approval.

City's standard requirements of submitting a will serve letter request to SCE in order to verify the service area supply has the capacity to meet project demands.

Table 5.14-5 Estimated Project Electricity Demands

	Total Electricity Demands, kWh/yr
Proposed Project[2]	
Apartment Mid Rise Living Units[1]	885,996
Enclosed Parking with Elevator	900,291
Health Club[2]	54,223.6
Parking Lot	13,520.4
Total	**1,854,031**

[1] U.S Energy Information Administration. Commercial Buildings Energy Consumption Survey (CBESCS).
[2] CalEEMod v.2013.2. Appendix B1 calculation Details for CalEEMod

Natural Gas

Project operation is estimated to use about 4.14 thousand cubic feet (Mcf) per year as presented below in Table 5.14-6, *Estimated Project Natural Gas Demands*. The Southern California Gas Company (SCGC) provides natural gas service to the project site. A will serve letter from SCGC will act to ensure that project demands meet available supply in the project area.

Renewable Energy

Project development would not interfere with achievement of the 60 percent Renewable Portfolio Standard set forth in SB 100 for 2030 or the 100 percent standard for 2045. These goals apply to electricity retailers, and as electricity retailers reach these goals, emissions from end user electricity use will decrease from current emission estimates.

Table 5.14-6 Estimated Project Natural Gas Demands

Land Use	Total Natural Gas Demands, cubic feet/yr
Proposed Project[2]	
Apartment Mid Rise Living Units[1]	3,975.9
Health Club[2]	162
Total	**4,137.9**

[1] U.S Energy Information Administration. Commercial Buildings Energy Consumption Survey (CBESCS).
[2] Operation of the parking areas would not use natural gas.

Transportation

Vehicle Miles Traveled and Fuel Consumption

Notably, the project would comply with the 2016 CALGreen Tier 1 standards for residential development, which requires that 5 percent of the total number of parking spaces provided for all types of parking facilities be electric vehicle charging spaces capable of supporting future electric vehicle supply equipment. As such, GHG emission reductions were quantified for the inclusion of 25 (i.e., 5 percent of 484 parking spaces) electric vehicle charging spaces for the project.

Transportation energy use depends on the type and number of trips, vehicle miles traveled (VMT), fuel efficiency of vehicles, and travel mode. Transportation energy used during operation of the site would come from delivery, employee, and visitor vehicles that would use diesel fuel and/or gasoline. The use of energy resources by these vehicles would be temporary and would fluctuate throughout the lifespan of the project. According to the Traffic Impact Study prepared for the proposed project (see Appendix J), the project would generate 1,349 average daily trips, with 89 AM peak hour and 109 PM peak hour trips.

CARB publishes the EMFAC2019 Web Database, which was used to calculate fuel consumption for the project-generated VMT. Table 5.15-7, *Operation-Related Vehicle Fuel and Energy Usage*, shows the calculated VMT and fuel consumption based on the project-generated trips.

Table 5.14-7 Operation-Related Vehicle Fuel and Energy Usage

Year	Gas		Diesel		CNG		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	Gallons	VMT	kWh
Proposed Project	4,484,669	185,462	315,131	34,774	12,584	3,598	46,073	15,386
Total	4,484,669	185,462	315,131	34,774	12,584	3,598	46,073	15,386

Notes: The full calculations are in Appendix B1 of the DEIR.

The gas consumption estimates in Table 5.14-7 would be a conservative figure, because as fuel efficiency in passenger cars increases, electric vehicle use expands, and fuel usage will decrease. The calculated fuel use represents less than 0.001 percent of the total fuel usage for light vehicles in the region over the same year in 2019 (1.39 billion gallons) (see Appendix B). This increase in fuel usage represents a conservative estimate, with the real use likely being less than calculated. The 0.001 percent increase in VMT associated with this project is considered negligible when compared to the region as a whole.

Summary

Based on the analysis above, Impact 5.14-6 would be less than significant.

5.14.4.4 CUMULATIVE IMPACTS

The area considered for cumulative impacts is that within both SCE's and SCGC's service areas—extending from Santa Barbara, Tulare, and San Bernardino counties on the north to Orange and Riverside counties on the south. Growth in the City of Torrance would result in additional demand for electricity service. Based on energy rates from the United States Energy Information Administration for land uses in the City, existing energy demand is approximately 3.1 million gigawatt hours (Gwh) per year. Future growth in accordance with the City's General Plan Land Use Element would generate a demand of approximately 8.0 million Gwh per year (Torrance 2009). Buildout in accordance with the Torrance General Plan Update would also result in additional need for natural gas service in the City by SCGC. Demand for electricity and natural gas services would be accommodated by the service providers. New facilities to support the demand for natural gas and electric service in the City of Torrance would be constructed by SCE and SCGC in accordance with the demand for new service. The City of Torrance will require that installation of utilities will be undergrounded.

Operation and construction of other projects would increase energy use. Other potential projects would be required to comply with Building Energy Efficiency Standards and the California Green Building Standards Code. Presumably, due to compliance with these regulations, other projects would not involve wasteful, inefficient, or unnecessary energy use, and cumulative impacts would be less than significant. Project impacts would not be cumulatively considerable.

5.14.4.5 EXISTING REGULATIONS AND STANDARD CONDITIONS

State

- Title 24, California Code of Regulations, Part 6: Energy Efficiency Standards for Buildings
- Title 24, California Code of Regulations, Part 11: California Green Building Standards Code

5.14.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Impact 5.14-4 Project construction and operation would not cause wasteful, inefficient, or unnecessary energy consumption, and project development would not conflict with a state or local plan for renewable energy or energy efficiency.

5.14.4.7 MITIGATION MEASURES

No mitigation measures are required.

5.14.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.14.5 References

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5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

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6. Significant Unavoidable Adverse Impacts

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but there are no impacts that would remain significant, unavoidable, and adverse after mitigation measures are applied.

6. Significant Unavoidable Adverse Impacts

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7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6[b])

- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])

- "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])

- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1]).

- "Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

For each development alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative as compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

1. Transform a dormant, former surface quarry into a productive land use while preserving the majority of the site as natural, open space.

2. Develop first class, modern housing options that meet the needs for market-rate housing and evolving household demographics in Torrance.

3. Provide short-term construction employment opportunities in the South Bay region and long-term housing in Torrance.

4. Provide additional residential opportunities that are consistent with the scale and intensity of the existing land uses along Hawthorne Boulevard.

5. Establish a high-quality architectural community that enhances the area through new development and landscaping along a high visibility corridor.

6. Resolve existing hazardous conditions in an economically feasible way.

7. Preserve significant hilltop open space and retain public access.

8. Cluster development to minimize the overall development footprint.

9. Contribute to diverse housing stock.

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this EIR.

7.2.1 Alternative Development Areas

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. While the proposed project does not result in any significant impacts, two locations were identified as feasible locations during the public scoping process – (1) the Del Amo Residential site, and (2) the Roadium Open Air Market site. Key factors in evaluating the feasibility of potential offsite locations for EIR project alternatives include:

- If it is in the same jurisdiction.
- Whether development as proposed would require a General Plan Amendment.
- Whether the project applicant could reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent). (CEQA Guidelines Section 15126.6[f][1])

7.2.1.1 DEL AMO RESIDENTIAL SITE

The Del Amo Residential Site is comprised of four parcels totaling 15.6 acres located on the northeastern edge of the exiting Del Amo Fashion Center property. The site is bounded by Del Amo Circle East to the west, Fashion Center Way to the North, Madrona Avenue to the east, and Carson Street to the South. This site is located within the Hawthorne Boulevard Corridor Specific Plan (HBCSP) area and is zoned: H-DA-1 (Hawthorne Boulevard Corridor Specific Plan – Del Amo District 1), with a General Plan designation of Commercial Center. Mixed use residential is allowed with a minimum density of 27 dwelling units per acre, and no maximum density.

The proposed project includes the development of 248 multi-family units with no commercial uses. Development of the proposed project's 248 units on the 15.6-acre site would result in a density of 15.89 units per acre, and thus would be below the City's required minimum density for that location of 27 units per acre. Therefore, this alternative would require a General Plan Amendment to be consistent with the reduced density. Development of this site would require demolition of existing structures and related construction activities resulting in similar if not increased construction-related impacts to air quality, noise, and traffic. While the proposed project would involve grading that would likely be greater than what would be required at this alternative location; development of the Del Amo Residential Alternative would require demolition of existing buildings and a similar level of construction activities. As such, construction activities associated with this alternative would result in additional impacts on noise, air quality and construction related traffic compared to the proposed project. Therefore, implementation of this alternative would result in similar if not slightly greater

impacts than what was evaluated for the proposed project. As this alternative would require a General Plan Amendment and it is not feasible that the applicant would be able to reasonably acquire, control, or otherwise have access to the alternative site, the Del Amo Residential Alternative was rejected from further consideration.

7.2.1.2 THE ROADIUM OPEN AIR MARKET SITE

The Roadium Open Air Market site is comprised of three parcels (4067-012-001, 4067-012-014, & 4067-013-001) totaling 14.41 acres and is located at 2500 West Redondo Beach Boulevard in the City of Torrance. The site is currently utilized as an open-air discount market. According to the Roadium Open Air Market website, the shopper count averages approximately 40,000 weekly or about 150,000 customers a month. The three parcels have disparate zoning and General Plan designations as follows:

- 4067-012-001 – Zoned C2-PP (General Commercial- Precise Plan), General Plan designation R-OF (Residential Office).
- 4067-012-014 – Zoned R-1 (Single-Family residential District), General Plan designation C-GEN (General Commercial).
- 4067-013-001 – Zoned C3-PP (Solely Commercial District-Precise Plan). General Plan designation C-GEN (General Commercial).

Development of the proposed project on the Roadium Open Air Market site would require a General Plan Amendment and a Zone Change, similar to the proposed project. While residential development would be an allowable use on the site with the implementation of a Zone Change (which would require a Conditional Use Permit and a Planned Development), the City's General Plan Land Use Element identifies this site for its historical and current use as a drive-in movie theater and its current use as an open air discount market, allowing for the aforementioned uses. The General Plan envisions neighborhood serving commercial uses or high-density mixed-use development at this site. The Roadium Open Air Market site is privately owned, and currently not available for purchase. As this alternative would require a General Plan Amendment and it is not feasible that the applicant would be able to reasonably acquire, control, or otherwise have access to the alternative site, the Roadium Open Air Market Alternative was rejected from further consideration.

The project applicant does not own or control any other sites within the jurisdiction of the City of Torrance that are considered feasible alternatives to the proposed project. Since the project applicant cannot reasonably acquire, control, or otherwise access any other sites, and since the analysis of other sites would be speculative without site-specific data, no other sites will be further considered. In general, any development of the size and type proposed by the project would have substantially the same impacts on air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation, tribal cultural resources and utilities. Impacts relating to aesthetics and biological resources would vary dependent on the availability of those resources within the alternative site locations. As described in the DEIR, Chapter 5, Sections 5.1 through 5.14, these impacts were found to be less than significant or less than significant with mitigation incorporated. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (CEQA Guidelines § 15126[5][B][1]). As there are no identified significant effects of the proposed project, no further analysis of alternative locations is required.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following three alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project/No Development
- Allowable Density Alternative
- Reduced Density Alternative

An EIR must identify an "environmentally superior" alternative. Where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. However, only those impacts found significant and unavoidable are used in making the final determination of whether an alternative is environmentally superior or inferior to the proposed project. No impacts were found to be significant and unavoidable in the DEIR. Section 7.7 identifies the Environmentally Superior Alternative. Table 7-1, *Comparison of Alternatives* provides a summary of the proposed project and the two identified development alternatives, followed by an analysis of the No Project Alternative in Section 7.4. A density analysis of the proposed project on the entire 24.68-acre site results in a ratio of 10.0 dwelling units per acre (DU/acre), and would support the project's general plan amendment request to change the land use designation from Low-Density Residential (0-9.0 DU/acre) to Low-Medium-Density Residential (9.10-18.0 DU/acre). When viewed as an independent parcel, only the 5.71-acre developable area of Lot 1 was considered, resulting in the proposed project's DU/acre ratio of 43.4. For comparison purposes, the allowable density alternative and the reduced density alternative were analyzed utilizing the available 5.71-acre development area of Lot 1, as presented below.

Table 7-1 Buildout Statistical Summary

	Proposed Project	Allowable Density Alternative	Reduced Density Alternative
Dwelling Units	248	51	188
Maximum Building Height	65	27	55
Population	722[1]	135[2]	562
Employment	5	0	5
DU/Acre (5.71 acres Lot 1)	43.4	8.9	32.9

1 The project population estimate used in the EIR was 722, from the Hydraulic Network Analysis for the proposed project, which assumes occupancy of two persons per bedroom and is considered a conservative estimate.
2 The project population estimate is based on the average household size in the City of Torrance in 2017, 2.62 persons; see California Department of Finance. 2017. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011- 2017. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2017InternetVersion.xls.

7.4 NO PROJECT/NO DEVELOPMENT ALTERNATIVE

In this alternative the proposed project is not built, and the project site remains as is. The backfilled former mine pit would remain as bare land and sparse vegetation, mainly non-native grassland. The upland portion of the project site would remain as vacant land and would continue to operate in its current capacity. Currently,

the site is private property, signed and partially restricted by fencing on adjacent properties; there are no sanctioned public access points to the site. However, it should be noted that public trespassing onto the property commonly occurs from multiple access points in Palos Verdes Estates, Rolling Hills Estates and Torrance.

7.4.1 Aesthetics

In the No Project/No Development Alternative the project site remains in its current condition; therefore, the existing visual character and resources would remain as is. The various visual changes that would be introduced through development of the site (e.g., landscaping, building form, architectural design, materials and finishes, and lighting)and the amendment to the Torrance General Plan and zone change would not occur under this alternative. Therefore, the existing visual character and resources near and on the project site would be preserved in their current state. Given that no development would occur, no new sources of light or glare would be generated either. Although aesthetics impacts are inherently subjective, the proposed project would improve the vacant, unmaintained site with a new residential building and landscaping. However, this alternative would not alter or impede scenic views from Slope 1 or Slope 3. Therefore, it is concluded that the aesthetics impact for the No Project/No Development alternative (vacant, unmaintained lot) would be less than for the proposed project. As with the proposed project, aesthetic impacts would be considered less than significant.

7.4.2 Air Quality

The No Project/No Development Alternative would not involve construction and operation of land uses that would generate criteria air pollutants and toxic air contaminants. Proposed project impacts respecting construction emissions, operational emissions, consistency with the Air Quality Management Plan, and objectionable odors would all be less than significant without mitigation. Overall, air quality impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project as no grading, construction or site development would occur.

7.4.3 Biological Impacts

The No Project/No Development Alternative would not involve clearance of the 5.71-acre development area or partial clearance of the 0.99-acre brush management zone within Lot 2. No direct impacts to burrowing owl, toyon chaparral, or to nesting birds would occur; and no indirect impacts to sensitive species or to toyon chaparral—such as noise, lighting, and dust—would occur. All of those impacts of the proposed project would be less than significant with mitigation for the proposed project. Overall, biological resources impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.4 Cultural Resources

The No Project/No Development Alternative would not involve ground disturbance in the backfilled former mine pit. Impacts of the proposed project to historical and archaeological resources would be less than significant: project development would not diminish the historical significance of any historic properties, and it is expected that mining equipment or other artifacts that could yield information important to the mining

history of the Palos Verdes Peninsula would have been removed before or during closure of the mine. Overall, cultural resources impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.5 Geology and Soils

The No Project/No Development Alternative would not involve development of 248 housing units in a site subject to hazards from landslides, small slips during future earthquakes, soils unsuitable for supporting the proposed development, and expansive soils. Geological hazard impacts of the proposed project would be less than significant after compliance with regulations and recommendations of the geotechnical investigation report. The No Project/No Development Alternative would lessen potential for these hazards and impacts would be reduced from the proposed project, as no excavation or grading would occur. The No Project/No Development Alternative would not disturb soil and thus would not potentially damage fossils on the project site. While impacts of the proposed project on fossils would be less than significant with mitigation, these impacts would be non-existent under the No Project/No Development Alternative. Overall, geology and soils impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.6 Greenhouse Gas Emissions

The No Project/No Development Alternative would not involve development of residential uses that would generate GHG emissions during construction and operation. No construction grading or development activities would occur, and no operational impacts would be introduced involving vehicle traffic and building emissions. Impacts of the proposed project on GHG emissions and on policies and plans for reducing GHG emissions would both be less than significant without mitigation. Overall, GHG impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.7 Hazards and Hazardous Materials

The No Project/No Development Alternative would not develop residential uses on backfill soil contaminated with arsenic, hexavalent chromium, benzo(a)pyrene, benzene, and tetrachloroethylene, at concentrations above screening levels for residential uses. Impacts of the proposed project arising from contaminated soil and soil vapor would be less than significant after implementation of mitigation including a vapor barrier cap or sub-slab liner; an operations and maintenance monitoring plan for the cap or liner; and institutional controls such as prohibitions on activities that could damage the cap or liner, as required and overseen by the Department of Toxic Substances Control (DTSC).

The No Project/No Development Alternative would not involve construction or operation of land uses; and thus, would not use hazardous materials in construction and operation and would not create hazards arising from accidental release of hazardous materials present on the project site. As no development or occupancy of the site would occur under the No Project/No Development Alternative, there would be no potential for upset of contaminated soil on the site and no potential exposure to site users. While such impacts of the proposed project would be less than significant, impacts from hazards would be reduced under the alternative.

The No Project/No Development Alternative would not involve development of residential uses next to a Very High Fire Hazard Severity Zone (VHFHSZ). Proposed project development would not exacerbate wildfire risks in VHFHSZs upwind from the project site or within the Development Area and thus, would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Wildfire hazard impacts of the proposed project would be less than significant, and the No Project/No Development Alternative would not cause wildfire hazard. Overall, hazards and hazardous materials and wildfire impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.8 Hydrology and Water Quality

The No Project/No Development Alternative would not add impervious areas or otherwise change the hydrology of the project site and would not involve construction or operation of land uses that would generate water contaminants either onsite or offsite. Impacts of the proposed project on hydrology, flooding, and water quality would be less than significant after regulatory compliance. Overall, hydrology and water quality impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project, as no development and no changes to the site's drainage patterns would occur compared to existing conditions.

7.4.9 Land Use

The No Project/No Development Alternative would not involve construction or operation of the new residential uses onsite. The proposed project was found to be consistent with the City of Torrance General Plan and policies adopted for the purpose of avoiding or mitigating an environmental effect, and with approval of the proposed project's General Plan Amendment, zone change and Precise Plan, impacts would be less than significant. Land use and planning impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project as no development would occur onsite, and no zone changes or general plan amendment would occur.

7.4.10 Noise

The No Project/No Development Alternative would not involve construction and operation of residences onsite. Proposed project construction would subject nearby residents to noise levels exceeding local standards. Project operation could subject project residents near Hawthorne Boulevard to interior noise levels exceeding local standards. Noise impacts of the proposed project would be less than significant with mitigation. Noise impacts would be nonexistent under the No Project/No Development Alternative as no new development or planned uses would occur and would not result in additional construction or operational noise. Overall, noise impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project.

7.4.11 Public Services

The No Project/No Development Alternative would not involve development of residential uses that would increase demands for fire protection, emergency medical services, police protection, schools, and library services. Public services related impacts of the proposed project would be less than significant without

mitigation. Overall, public services impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project, as no new residential uses would be created in the project area.

7.4.12 Transportation and Traffic

The No Project/No Development Alternative would not involve development of residential uses that would result in an increase of vehicle trips to the local and regional circulation system. Under this alternative, no development would occur on the project site, and therefore no construction traffic or operational traffic would be created as a result. Transportation and traffic impacts of the proposed project would be less than significant with mitigation. Since this No project/No Development Alternative would not add any vehicle trips to the roadway system or involve any construction activities, traffic impacts would be reduced compared to those of the proposed project.

7.4.13 Tribal Cultural Resources

The No Project/No Development Alternative would not involve development onsite that could damage tribal cultural resources (TCRs). No TCRs are expected to be present in backfill soil in the mine pit; however, project construction would involve some disturbance of native soils that could contain TCRs and could damage TCRs on the surface that may not have been identified by the Cultural Resources Investigation. Proposed project impacts to TCRs would be less than significant with mitigation. Overall, tribal cultural resources impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project since no disturbance of the soils would occur.

7.4.14 Utilities and Service Systems

The No Project/No Development Alternative would not involve development onsite that would generate utility demands or require installation of infrastructure. Proposed project development would generate wastewater; require replacement of existing sewers with larger sewers in Hawthorne Boulevard and 242nd Street; increase water demand; increase solid waste generation; and increase use of electricity, natural gas, and transportation fuels. Proposed project impacts to wastewater treatment capacity; solid waste disposal capacity; and supplies of water, electricity, and natural gas would be less than significant without mitigation. Proposed project impacts to sewer capacity would be less than significant with mitigation. Overall, utilities and service systems and energy impacts would be reduced by the No Project/No Development Alternative compared to those of the proposed project as no development would occur and no additional demand would be added to existing infrastructure.

7.4.15 Conclusion

Compared to the Proposed Project, the No Project/No Development Alternative would reduce impacts to aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials and wildfire hazards, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, tribal cultural resources, and utilities and service systems and energy compared to impacts of the proposed project.

The No Project/No Development Alternative would not achieve any of the proposed project objectives: transform a reclaimed mine while preserving the majority of the site as natural, open space; develop first class, modern, market-rate housing; provide short-term construction employment and long-term housing in Torrance and the South Bay Region; provide additional residential opportunities consistent with the scale and intensity of existing land uses along Hawthorne Boulevard; enhance the area through new development and landscaping along a high visibility corridor; resolve existing hazardous conditions in an economically feasible way; preserve significant open space and retain existing public access; minimize the development footprint; and contribute to diverse housing stock.

7.5 ALLOWABLE DENSITY ALTERNATIVE

The Allowable Density Alternative would provide for the development of 51 single-family detached homes within the 5.71-acre Lot 1 development area consistent with the existing allowable density of the general plan designation. The proposed project site has a current General Plan designation of Low-Density Residential (R-LO), which allows for development of 0-9.0 dwelling units per acre. Development of the project's 24.68 acres would result in the development of 222 single-family homes within the 24.68-acre site. However, in order to develop these 222 structures, it is assumed that all of Lot 3's 12.92-acres would be developed, and Slope 3 would be substantially graded. However, development of the project site with a more intensive construction scenario would not fulfill the requirements set forth in CEQA Guidelines Section 15126.6(b), which requires that "…the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project." Therefore, this alternative assumes that all development associated with the Allowable Density Alternative would occur within the 5.71-acre footprint of Lot 1's development area.

The Allowable Density Alternative assumes that the homes would be no higher than 27 feet in height, consistent with the single-family development standards and reviewed under the Hillside and Local Coastal Overlay Zone requirements with implementation of a Precise Plan. In contrast to the proposed project, the Allowable Density Alternative would not require a General Plan Amendment or a zone change, but would similarly require the preparation of a Precise Plan and Tentative Tract Map subdivision activity.

Under this Alternative, it is assumed that all parking would be provided for in private two-car garages as required for single family residences, and with surface parking within the development, and that no parking structure would be constructed. Further, this alternative would reduce the building height of the one- to two-story residential structures to between 14 and 27 feet, which would substantially reduce the visibility of the buildings from Hawthorne Boulevard and Via Valmonte as compared to the proposed project. The decreased density would also allow for more landscaping and open area on the development lot. Due to the reduced density, height and massing, the Allowable Density Alternative would not be readily visible to the five homes located to the northwest of the project site along Via Valmonte

Construction activities would be similar to those anticipated for the proposed project, as this alternative would result in extensive grading with the removal of Slope 2, geotechnical engineering for foundations and footings, and the development of the clean soil cap as required by DTSC. However, grading and excavation activities would be slightly reduced compared to the proposed project as the geotechnical preparation would be reduced

due to the shallower foundations required for single-family houses. As such, it is anticipated that there would be a reduction in soils export activities. Similarly, building construction and architectural coating would be significantly reduced from those evaluated for the proposed project due to the lower intensity of the development. Under the Allowable Density Alternative, Lots 2 and 3 are retained as natural open space, as with the proposed project.

7.5.1 Aesthetics

Under the Allowable Density Alternative, 51 one- to two-story single-family homes with a maximum height of 14 to 27 feet would be developed, respectively. The Allowable Density Alternative would significantly reduce the aesthetic impacts of the project. The reduced density of development would allow for an increase in landscaping, as well as allow for greater setbacks from Hawthorne Boulevard compared to the proposed project. As discussed in Chapter 5.1, Aesthetics, the proposed project would alter the horizon/skyline of the existing bluff and create buildings visible from various vantage points where no buildings currently exist. Under the proposed project, the residential uses along Via Valmonte would have altered foreground views with development of the residential buildings and the parking structure. Under this alternative, the views from the affected homes on Via Valmonte would be unaltered. As with the proposed project, this alternative would not obstruct existing public scenic views or otherwise substantially impact scenic views or resources. Additionally, the buildings constructed under this alternative would have a maximum height of 14 to 27 feet and would not be visible to the homes along Via Valmonte, thereby reducing potential impact associated with new light sources. As a result, this alternative would result in less impact than the proposed project with regard to aesthetic resources.

7.5.2 Air Quality

The Allowable Density Alternative would result in substantially less construction activity compared to the proposed project due to the decrease in housing units and elimination of the parking structure. While grading and soil hauling activities are anticipated to be similar but slightly reduced, building construction would be substantially reduced under the Allowable Density Alternative. The smaller buildings would also require a reduction in the need for retaining walls and other landform alterations compared to the proposed project. Additionally, operation of the Allowable Density Alternative would result in a reduction in the maximum daily operational phase impacts. Regional emissions would also be reduced due to the reduction in total daily vehicle trips and associated vehicle miles traveled. Proposed or Alternative Project operational impacts would not exceed SCAQMD's threshold levels. The Allowable Density Alternative would reduce air quality impacts compared to the proposed project.

7.5.3 Biological Impacts

While the development intensity of the Allowable Density Alternative is substantially reduced, this alternative assumes the same level of area disturbance within the 5.71 acres of Lot 1. As such, construction and operational activities would disturb a similar amount of native grasslands and special status species. This alternative would therefore be environmentally equal to the proposed project with regard to biological impacts.

7.5.4 Cultural Resources

This alternative would involve ground-disturbing activities throughout the entire development area. However, grading and excavation activities would be slightly reduced compared to the proposed project as the geotechnical preparation would be reduced due to the shallower foundations required. As a result, this alternative would be slightly less likely to disturb undiscovered cultural resources. Impacts would remain less than significant, and the impacts of the Allowable Density Alternative would be similar, but slightly reduced to those of the proposed project

7.5.5 Geology and Soils

The Allowable Density Alternative's buildings would have a significantly smaller footprint and significantly shorter building height than those in the proposed project. Smaller footprints and scale of buildings would reduce the need for retaining walls, excavation and grading, and similar landform alteration. While hazards present as relating to geology and soils (such as potential for landslide, soils unsuitable for supporting the proposed development and expansive soils) would still exist on the project site, many impacts would be lessened by the decrease in building excavation and footing depth of single family homes compared to five-story residential development. As with the proposed project, this alternative would be required to comply with the latest California Building Code (CBC) and the site-specific geotechnical report recommendations. Therefore, the impacts to geology and soils from the Allowable Density Alternative would be slightly less, but generally similar to, those of the proposed project. Impacts under this alternative would remain less than significant.

7.5.6 Greenhouse Gas Emissions

The Allowable Density Alternative, like the proposed project, would generate an increase in greenhouse (GHG) emissions onsite and would not exceed the SCAQMD's proposed GHG screening threshold. As with air quality impacts, while grading and soil hauling activities are anticipated to be similar but slightly reduced, building construction would be substantially reduced under the Allowable Density Alternative due to the decrease in density, building footprint and building size, and elimination of the construction of the parking structure. Operational vehicle trips associated with the Allowable Density Alternative would be less than the proposed project due to the decrease in occupancy. GHG emissions under this alternative would be less than under the proposed project. Impacts would remain less than significant.

7.5.7 Hazards and Hazardous Materials

The Allowable Density Alternative would be subject to the same oversight provided for the proposed project by the Department of Toxic Substances Control (DTSC). In October 2017, Torrance entered into a California Land Reuse and Revitalization Agreement Act (CLRRA) Agreement for regulatory oversight of the environmental aspects of the Project Site with DTSC. The Allowable Density Alternative would still be subject to the regulations and guidelines of federal, state, and local agencies for the use, handling, storage, and transport of hazardous materials. Therefore, impacts would be similar to the proposed project and less than significant.

7.5.8 Hydrology and Water Quality

This alternative would create significantly smaller building footprints. The smaller structures and building footprints would create slightly less impervious areas on the project site, as additional spaces for landscaping would be introduced. Therefore, this alternative would reduce sheet flow runoff, provide larger landscaped areas for infiltration, and allow for greater flexibility in treating runoff throughout the site. As a result, reduced sheet flow runoff would be easier to control, direct, and detain, thereby reducing potential runoff from the property. As with the proposed project, new infrastructure, such as curbs, gutters, and drains, would be constructed to minimize runoff.

As with the proposed project, neither the construction nor the operation of the Allowable Density Alternative would result in a significant degradation of water quality, or in a violation of any water quality standards. Likewise, neither the construction nor the operation of this alternative would significantly reduce, degrade, or otherwise impact groundwater. The construction and operational impacts of the Allowable Density Alternative would be slightly less due to the reduced intensity of development than those of the proposed project and therefore the impacts to hydrology and water quality would be less.

7.5.9 Land Use

The Allowable Density Alternative would allow for a single-family residential development within the footprint of the proposed project's development area, with less development intensity than the proposed project. This alternative would not require amendments to the General Plan and Zoning Code, but would still require preparation of a Precise Plan. This alternative would clearly be consistent with the requirements of the Hillside and Local Coastal Overlay Zone, adherence to which protects against development infringing on light, air, view, and privacy of the neighborhood. As such, this alternative would have a reduced impact compared to the proposed project, as the proposed project partially obstructs foreground and long-range views from existing uses along Slope 1 and Slope 3. The proposed project would require a General Plan Amendment and a Zone Change, which would not be required under the Allowable Density Alternative. As such, this alternative would have similar, but reduced impacts to the proposed project, which were found to be less than significant.

7.5.10 Noise

Reduction in building development intensity would incrementally reduce the length of project-related construction noise impacts, but not peak construction noise volumes. As described in Section 5.10, peak construction noise is created by grading operations for the proposed project. While grading activities would be reduced under this alternative, the peak construction activity would still occur under this alternative. Due to the peak construction noise volumes and distance to sensitive activities this alternative would be slightly less than the proposed project, but still require mitigation to reduce impacts. During the operational phase, this alternative would be significantly reduced compared to the proposed project due to the reduced intensity of uses. However, no significant operational-related noise impacts were identified for the proposed project. The noise impacts of this alternative would be reduced compared to the proposed project and would be less than significant.

7.5.11 Public Services

As the Allowable Density Alternative would be located on the same site as the proposed project but would result in a smaller amount and type of development than the proposed project, development under the Allowable Density Alternative would generate a smaller number of new residents than the proposed project. Therefore, impacts to public services would be lesser due to the decrease in project occupants. Accordingly, impacts to fire, police, schools, parks and libraries would be less than significant under Allowable Density Alternative with the payment of required development impact fees and school fees, but reduced from the proposed project.

7.5.12 Transportation and Traffic

Short-term traffic impacts under the Allowable Density Alternative would be similar in nature but slightly less than the proposed project because of the decrease in the number of construction-related trips and length of construction activities. Similar to the proposed project, this alternative would reduce impacts to less than significant levels through the implementation of a construction traffic management plan as required by Mitigation Measure TR-1. Operational impacts would be reduced due to the substantial reduction in trips associated with the Allowable Density Alternative. Therefore, operational traffic impacts would be less under this alternative compared to the proposed project. Overall, impacts to transportation and traffic under the Allowable Density alternative would be lesser than those of the proposed project.

7.5.13 Tribal Cultural Resources

This alternative would involve ground-disturbing activities throughout the entire Lot 1 development area. The decreased density would allow for more landscaping and open area, and actual building footprints would encompass a slightly reduced amount of the site as compared to the proposed project, which would have a reduced likelihood of impacting tribal cultural resources than the proposed project. As a result, this alternative would be slightly less likely to disturb undiscovered tribal cultural resources. Impacts would remain less than significant, and the impacts of the Allowable Density Alternative would be similar but reduced compared to those of the proposed project, as extensive excavation and grading would still occur.

7.5.14 Utilities and Service Systems

Under the Allowable Density Alternative, building square footage and intensity of uses would be substantially reduced compared to the proposed project. Therefore, this alternative would generate less wastewater and consume less water. The solid waste generation of this alternative would also be reduced. Under this alternative, allowable building square footage would be reduced, and the associated energy demand would also be reduced. Construction and operational activities associated with this alternative would have reduced energy demand. Overall, utilities and service systems impacts of this alternative would be reduced compared to the proposed project and would remain less than significant after mitigation, as with the proposed project.

7.5.15 Conclusion

The Allowable Density Alternative would lessen environmental impacts in the areas of aesthetics, air quality, GHG emissions, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, tribal cultural resources, and utilities and service systems. This alternative would be required to implement all mitigation measures identified for the proposed project in order to ensure that impacts would remain less than significant. However, in accordance with CEQA, significant environmental effects may be avoided or substantially lessened through implementation of feasible alternatives or feasible mitigation measures.

Impacts to biological resources, geology and soils, and hazards and hazardous materials would remain the same as the proposed project. Therefore, this alternative is considered to be environmentally superior to the proposed project.

Under the Allowable Density Alternative, most of the proposed project's objectives would be achieved but to a lesser extent as compared to the proposed project. For example, the Allowable Density Alternative would transform the vacant former mining site and enhance the area with first class, modern housing while preserving the majority of the site for open space (Objectives 1,2,5,7), provide for short-term construction jobs while resolving existing hazardous conditions (Objectives 3,6), and cluster development to minimize the overall development footprint (Objective 8) . However, these objectives would be achieved to a lesser extent given the reduction in development intensity. Additionally, this alternative would not provide additional residential opportunities consistent with development density along portions of Hawthorne Boulevard (Objective 4) or contribute to a diverse housing stock to the same extent as the proposed project (Objective 9).

7.6 REDUCED DENSITY ALTERNATIVE

The Reduced Density Alternative would consist of development of the site with three four-story apartment buildings, comprised of 181-units, as well as a separate three-story 122-space parking garage. The first level of each building would include ground level semi-subterranean parking, with the exception of (Building A, which would be is semi-subterranean,) and ground floor lobbies, with three residential floors on the second through fourth floors. Similar to the proposed project, this alternative assumes that all development associated with the Reduced Density Alternative would occur within the 5.71-acre footprint of Lot 1's development area. The total density for the 181-unit buildings would be 31.69 dwelling units per acre within the 5.71-acre Lot 1, and 7.33 dwelling units per acre within the entire 24.68-acres site.

The proposed breakdown of units would be 99 one-bedroom and 82 two-bedroom units. The residential units would have a finished height of approximately 55 feet, while the parking structure would be approximately 48 feet high. This alternative assumes the same amount of parking being supplied under the three residential buildings as the proposed project, which would result in the parking structure being required to provide 122 spaces. The Reduced Density Alternative would provide the same onsite amenities, including common open space and recreation areas, a pool, and a clubhouse. Landscaping would be provided around the perimeter of Lot 1's development area, the site's entrance and surface parking area, courtyard, and pool area. Under the Reduced Density Alternative, Lots 2 and 3 are retained as natural open space, as with the proposed project.

The Reduced Density Alternative would result in a similar level of construction intensity, as development of the project site under this alternative would require largely the same construction activities, including grading and soil hauling activities. As such, it is assumed that building pads would be constructed in the same manner as the proposed project, including the amount of excavation and grading, geotechnical engineering, and associated haul trips. It is also assumed that the buildings would have a similar finished floor elevation between 190.5 to 193.5 amsl.

7.6.1 Aesthetics

The Reduced Density Alternative would be located on the same site as the proposed project and would result in a similar type of development as compared to proposed project. This Alternative would introduce development onto a currently vacant site and would result in changes to the aesthetic character. However, the overall size and design of the Alternative would be more in keeping with the surrounding developments, as structures would be at a maximum of 55 feet high, as opposed to 65 feet under the proposed project. Furthermore, the Alternative's overall size would be less than that proposed under the project, such that the Reduced Density Alternative would result in reduced impacts on the residential uses north of the project site on Via Valmonte. Impacts associated with light and glare would also be similar to the proposed project, because interior and exterior artificial light would be necessary, and exterior-building materials would be identical to the proposed project. As with, the proposed project, Mitigation Measure MM-AE-1 would be implemented to reduce light and glare impacts. Overall, aesthetic impacts anticipated under this Alternative would be similar to the proposed project, although slightly less due to the slightly lower building heights and the reduced exterior nighttime lighting requirements and would be less than significant.

7.6.2 Air Quality

Development of the Reduced Density Alternative would result in a substantially similar duration and amount of construction activities as analyzed for the proposed project in the EIR. Although the construction impacts of this Alternative would be slightly reduced than that identified for the proposed project, compliance with the regulations set forth by the SCAQMD and identified for the proposed project would apply to this Alternative. As such, the Reduced Development Alternative would not exceed SCAQMD's daily thresholds for construction related emissions.

Construction of this alternative would not expose sensitive receptors to substantial pollutant concentrations due to project-generated toxic air contaminants. Although construction activities typically generate emissions of toxic air contaminants (e.g., diesel emissions, fumes from paint and solvents), neither the amount of these emissions or the location of such emissions would result in substantial exposure for sensitive receptors in the project vicinity. This impact would be less than significant.

Construction activities associated with this alternative would not generate emissions that would result in an exceedance of localized significance thresholds established by the SCAQMD. This impact would be less than significant.

The maximum daily operational phase regional emissions would also be reduced due to the reduction in total daily vehicle trips and associated vehicle miles traveled. However, project operational impacts would not exceed

SCAQMD's threshold levels. This alternative would slightly reduce the air quality impacts, which would be less than significant.

7.6.3 Biological Impacts

The building footprints would remain the same for each unit, as would the area of construction in Lot 1. Construction and operational activities would not disturb additional native grasslands and special status species. This alternative would therefore be environmentally equal to the proposed project with regard to biological impacts.

7.6.4 Cultural Resources

This alternative would involve the same amount of ground-disturbing activities, which would have a similar likelihood of impacting archaeological or paleontological resources compared to the proposed project. As a result, this alternative would be just as likely to disturb undiscovered cultural resources. Impacts would remain less than significant, and the impacts of the Reduced Density Alternative would be equal to those of the proposed project.

7.6.5 Geology and Soils

The proposed project's building footprints would remain unchanged in this alternative. Development of a four-story residential building (three stories of residential over one story of parking) rather than a five-story residential building does not impact the grading volumes or slope stability. The proposed project would require the same amount of grading and soil transport as this alternative. The impacts for this alternative would be equal to the proposed project with regard to geology and soils.

7.6.6 Greenhouse Gas Emissions

The Reduced Density Alternative would result in a reduction in overall development by 65 residential units and would decrease vehicle trips compared to the proposed project. Therefore, this alternative would result in a reduction in construction and operational GHG emissions as compared to the project. As with the proposed project, impacts related to GHG emissions would be less than significant.

7.6.7 Hazards and Hazardous Materials

There would be no difference between this alternative and the proposed project in terms of handling, transporting, or disposing of hazardous or potentially hazardous materials. Grading, and excavation activities for the Reduced Density Project could result in the exposure of construction personnel and the public to hazardous substances in the soil. Similar to the proposed project, implementation of the Reduced Density Alternative would involve the use of hazardous materials during construction and could expose construction workers to hazardous materials during grading from contaminated soils. However, construction materials such as fuels, paints, and solvents would be used in limited quantities and would not pose a significant safety hazard. Any remediation would be required to comply with the appropriate standards and guidelines.

The Reduced Density Alternative would be subject to the same oversight provided under the proposed project by the Department of Toxic Substances Control (DTSC.) In October 2017, Torrance entered into a California Land Reuse and Revitalization Agreement Act (CLRRA) Agreement for regulatory oversight of the environmental aspects of the Project Site with DTSC. The Reduced Density Alternative would still be subject to the regulations and guidelines of federal, state, and local agencies for the use, handling, storage, and transport of hazardous materials. Therefore, impacts would be similar to the proposed project and remain less than significant.

7.6.8 Hydrology and Water Quality

The construction and operation of the Reduced Density Alternative would be similar to the proposed project and therefore the impacts to hydrology and water quality would be the same. As with the proposed project, neither the construction nor the operation of the Reduced Density Alternative would result in a significant degradation of water quality, or in a violation of any water quality standards. Likewise, neither the construction nor the operation of this alternative would significantly reduce, degrade, or otherwise impact groundwater. Therefore, the hydrology and water quality impacts of this alternative would be similar to those of the proposed project.

7.6.9 Land Use

The Reduced Density Alternative would allow for a residential development within the footprint of the proposed project's development, but with less development intensity than the proposed project. This alternative would also require amendments to the general plan and zoning code. Due to the reduced heights, this alternative would not obstruct the foreground and long-range views from existing uses along Slope 1 and Slope 3 to the same extent as the proposed project. The project's roofline is below the grade of all other residences along Via Valmonte, and this alternative would result in a development that is an additional 10-feet below the grade. As with the proposed project, silhouettes will be necessary to accurately assess whether the scale of the proposed structures is orderly and in harmony with the nearby commercial development and the adjacent residential development during the Precise Plan/entitlement review of the proposed project. Similar to the proposed project, this alternative would require a General Plan Amendment and a Zone Change in order to be consistent with the City's General Plan. Therefore, this alternative would result in slightly reduced, less than significant impacts with regard to land use.

7.6.10 Noise

Reduction in building development intensity would incrementally reduce the length of project-related construction noise impacts, but not peak construction noise volumes. Due to the peak construction noise volumes and distance to sensitive activities this alternative would be slightly reduced compared to the proposed project.

The reduction in vehicle trips would slightly reduce the operational traffic-related noise impacts. However, no significant operational-related noise impacts were identified for the proposed project. Overall, noise impacts of

this alternative would be slightly reduced compared to the proposed project and would remain less than significant with mitigation.

7.6.11 Public Services

Like the proposed project, this alternative would comply with the California Fire Code, and implementation of existing regulations and standard conditions would ensure that impacts related to fire service are not substantially different from that of the proposed project. As part of the proposed project, public service providers were contacted to determine whether development would adversely impact existing and future planned levels of service and resources. Fire and police protection service providers determined the project would not result in any adverse impacts to their services and resources. As with the proposed project, public service impacts would be slightly lessened due to the decrease in density, and would remain similar and less than significant.

7.6.12 Transportation and Traffic

Circulation, access, and parking on the site would be substantially similar to the proposed project. Access under the Reduced Density Alternative would be similar to the access configuration for the proposed project. Accordingly, review and approval of site plans by the City and its Fire Department before it issues a building permit for this alternative would ensure that development of this alternative does not substantially increase roadway hazards, nor result in inadequate emergency access. Additionally, consistent with the proposed project, the Reduced Density Alternative would not conflict with adopted policies, plans, or programs related to alternative transportation, as the site is well served by public transportation. As such, the Reduced Density Alternative, similar to the proposed project, would result in a less-than-significant impact related to roadway hazards, emergency access, and alternative transportation.

As the Reduced Density Alternative would result in a smaller number of residential units, the number of trips generated daily and during the AM and PM peak hours by the Reduced Density Alternative would be less than the proposed project. Therefore, consistent with the proposed project, all study intersections would operate at an acceptable level of service (LOS) under this alternative. As such, the Reduced Density Alternative would not result in significant traffic impacts at any of the study intersections, and a less-than-significant impact, similar to, but less than, the proposed project, would occur as the number of trips would be reduced compared to the proposed project under the Reduced Density Alternative.

7.6.13 Tribal Cultural Resources

Impacts to tribal cultural resources would be similar for the Reduced Density Alternative as for the proposed project, as the development footprint would be similar. Impacts would be less than significant with implementation of mitigation for both the proposed project and this alternative.

7.6.14 Utilities and Service Systems

Under this alternative, building square footage would be reduced compared to the proposed project. Therefore, this alternative would generate less wastewater and consume less water. The solid waste generation would also

be reduced. Utilities and service systems impacts of this alternative would be reduced compared to the proposed project and less than significant after mitigation.

Under this alternative, allowable building square footage would be reduced, and the associated energy demand would also be reduced. Construction and operational activities associated with this alternative would have slightly reduced energy demand. Impacts would be similar to the proposed project and remain less than significant.

7.6.15 Conclusion

The Reduced Density Alternative would lessen environmental impacts in the areas of aesthetics, air quality, GHG emissions, noise, public services, transportation and traffic, and utilities and service systems compared to the proposed project. Similar to the Allowable Density Alternative, this alternative would be required to implement all mitigation measures identified for the proposed project in order to ensure that impacts would remain less than significant. However, in accordance with CEQA, significant environmental effects may be avoided or substantially lessened through implementation of feasible alternatives or feasible mitigation measures.

This alternative would have similar impacts in the area of biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and tribal cultural resources. Overall, this alternative is considered environmentally superior when compared to the proposed project.

Under the Reduced Density Alternative, all of the proposed project's objectives would be achieved but to a lesser extent as compared to the proposed project. For example, the Reduced Density Alternative would transform the vacant former mining site and enhance the area with first class modern housing while preserving the majority of the site for open space (Objectives 1,2,5,7), provide for short-term construction jobs while resolving existing hazardous conditions (Objectives 3,6), provide additional residential opportunities consistent with density of development along Hawthorne Boulevard (Objective 4), cluster development to minimize the overall development footprint (Objective 8) and contribute to a diverse housing stock (Objective 9)..

7.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where, as here, the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. One alternative has been identified as "environmentally superior" to the proposed project:

- Allowable Density Alternative

The Allowable Density Alternative has been identified as the environmentally superior alternative. As shown on Table 7-1, this alternative would lessen environmental impacts in the areas of aesthetics, air quality, GHG emissions, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, tribal cultural resources, and utilities and service systems. The alternative would be required to implement all

mitigation measures identified for the proposed project in order to ensure that impacts would remain less than significant. However, in accordance with CEQA, significant environmental effects may be avoided or substantially lessened through implementation of feasible alternatives or feasible mitigation measures.

This alternative would have similar impacts in the area of biological resources, geology and soils, hazards and hazardous materials, and tribal cultural resources.

Due to the reduction in development intensity, this alternative would reduce the extent to which project objectives are attained. Furthermore, this alternative would not provide additional residential opportunities consistent with development density along portions of Hawthorne Boulevard (Objective 4) or contribute to a diverse housing stock to the same extent as the proposed project (Objective 9). The alternative would, however, be consistent with the type and scale of residential development to the north and northwest along Via Valmonte and to the southeast across Hawthorne Boulevard.

Table 7-1 Summary of Impacts of Alternatives Compared to the Proposed Project

Topic	Proposed Project	No Project/No Build Alternative	Allowable Density Alternative	Reduced Density Alternative
Aesthetics	LTS/M	Less than project LTS	Less than project LTS/M	Less than project LTS/M
Air Quality	LTS	Less than project LTS	Less than project LTS	Less than project LTS
Biological Resources	LTS/M	Less than project LTS	Similar to the project LTS/M	Similar to the project LTS/M
Cultural Resources	LTS/M	Less than project LTS	Similar to the project LTS/M	Similar to the project LTS/M
Geology and Soils	LTS/M	Less than project LTS	Similar to the project LTS/M	Similar to the project LTS/M
Greenhouse Gas Emissions	LTS	Less than project LTS	Less than project LTS	Less than project LTS
Hazards and Hazardous Materials	LTS/M	Less than project LTS	Similar to project LTS/M	Similar to the project LTS/M
Hydrology and Water Quality	LTS	Less than project LTS	Less than project LTS	Similar to the project LTS
Land Use and Planning	LTS	Less than Project LTS	Less than project LTS	Less to the project LTS
Noise	LTS/M	Less than project LTS	Less than project LTS/M	Less than project LTS/M
Public Services	LTS	Less than project LTS	Less than project LTS	Less than project LTS
Transportation and Traffic	LTS/M	Less than project LTS	Less than project LTS/M	Less than project LTS/M
Tribal Cultural Resources	LTS/M	Less than project LTS	Less than project LTS/M	Similar to the project LTS/M
Utilities, Service Systems, and Energy	LTS/M	Less than project LTS	Less than project LTS/M	Less than project LTS/M

Notes: LTS: Less than Significant; LTS/M: Less than Significant with Mitigation Incorporated;

7. Alternatives to the Proposed Project

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8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in July 2017 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this DEIR. Please refer to the Initial Study (Appendix A) for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Study.

Note that the impact thresholds listed above are those in CEQA Appendix G, Environmental Checklist Form, when the Notice of Preparation for the EIR was circulated in Summer 2017. Various changes to impact thresholds were made as part of the CEQA Guidelines Update approved in December 2018. The topical sections in Chapter 5 of this DEIR have been revised with the new impact thresholds.

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
I. AESTHETICS. Would the project:	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	
a) 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
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact
V. CULTURAL RESOURCES. Would the project:	
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less than Significant Impact
VI. GEOLOGY AND SOILS. Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	Less than Significant Impact
ii) Strong seismic ground shaking?	Less than Significant Impact
iii) Seismic-related ground failure, including liquefaction?	Less than Significant Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Less than Significant Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	Less than Significant Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less than Significant Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	Less than Significant Impact
X. LAND USE AND PLANNING. Would the project:	
a) Physically divide an established community?	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	No Impact
XI. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	Less than Significant Impact
b) 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?	Less than Significant Impact
XII. NOISE. Would the project result in:	
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
XIII. POPULATION AND HOUSING. Would the project:	
a) Induce substantial 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)?	Less than Significant Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No Impact
XV. RECREATION.	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Less than Significant Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Less than Significant Impact

8.1.1 Agriculture and Forestry Resources

The project site—as well as the entire part of the Los Angeles Basin within Los Angeles County—is not mapped as important farmland on the California Important Farmland Finder maintained by the Division of Land Resource Protection (DLRP 2017). There are no Williamson Act contracts in effect on the project site and the project site is zoned by the City of Torrance for light agricultural use (A-1), which permits the growing of orchards, berries, and bush crops and development of detached single-family homes. While the project site is zoned for agricultural use, no such use exists on or near the site. The project site consists mainly of nonnative grassland, disturbed land, sagebrush, and toyon chaparral vegetation, and is not zoned for forestland protection or timber production. The project site is not located adjacent to or within the vicinity of any farmland. Therefore, the project would result in no impact to agricultural or forest resources.

8.1.2 Mineral Resources

A diatomaceous earth mine operated onsite from the early 1900s to the late 1950s. Diatomaceous earth mining was discontinued primarily due to reserve depletion; in addition, the ore in this area was low grade, generating large amounts of tailings (LACSD 1995).The project site is designated Mineral Resource Zone 2 (MRZ-2) by the California Geological Survey, meaning that significant Portland cement concrete (PCC)-grade aggregate resources are known to be present (CGS 2010). The Chandler sand and gravel quarry, an active mine, is approximately 1.2 miles southeast of the project site. In 2014 the City of Rolling Hills Estates approved redevelopment of a 228-acre site, including the Chandler Quarry, with single-family residences and a golf course (Rolling Hills Estates 2019). Future aggregate mining onsite would be incompatible with surrounding land uses, including a senior living facility next to the southeast site boundary and residences to the east, southwest, and northwest. Any remaining diatomaceous earth onsite is not considered valuable to the region and the state because of resource depletion by past mining and the low grade of the ore. Project development would not cause a loss of availability of a known mineral resource, and impacts to mineral resources would be less than significant.

8.1.3 Population and Housing

Population increase and estimated employment due to project development would be well within the regional population and employment forecast for the City. Population and employment growth impact would be less than significant. Project development would extend infrastructure into the 5.71-acre development area. The project would not extend infrastructure that could induce offsite growth, and such extension would be impracticable considering the steep cliff next to the south side of the development area. Therefore, impacts would be less than significant. In addition, there are no residents or housing onsite that would be displaced by project development; therefore, no impact to displacement of housing or residents would occur.

8.2 REFERENCES

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8. Impacts Found Not to Be Significant

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9. Significant Irreversible Changes Due to the Proposed Project

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. In the case of the proposed project, implementation would involve:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvements which provide access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following are the significant irreversible changes that would be caused by implementation of the Solana Residential Development project:

- Future development in accordance with the proposed project would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, water, and fossil fuels. Future development would also require the use of natural gas and electricity, petroleum-based fuels, fossil fuels, and water. The commitment of resources required for the construction and operation of future development accommodated by the proposed project would limit the availability of such resources for future generations or for other uses during the life of the project.

- An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, and sewer and water services) would also be required. The energy and social service commitments would be long-term obligations in view of the low likelihood of returning the land to its original condition once it has been developed.

- An increase in project-related vehicle trips would accompany population growth as a result of project buildout. Over the long term, emissions associated with such vehicle trips would continue to contribute to the South Coast Air Basin's nonattainment designation for ozone (O_3) and particulate matters ($PM_{2.5}$ and PM_{10}), nonattainment for lead (Los Angeles County only) under the California and National Ambient Air Quality Standards (AAQS), and nonattainment for nitrogen dioxide (NO_2) under the California AAQS.

- Project development is a long-term irreversible commitment of land onsite.

9. Significant Irreversible Changes Due to the Proposed Project

Given the low likelihood that the developed land would revert to lower intensity uses or to its current form, the proposed project would generally commit future generations to these environmental changes.

10. Growth–Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

Infrastructure Construction/Extension

The project involves construction of utilities on the 5.71-acre Development Area; utility connections to existing facilities in Via Valmonte and Hawthorne Boulevard; upsizing of the 8-inch to 12-inch sewer trunk lines; and expansion of a short storm drain segment from the Development Area to Via Valmonte. In addition, the City of Torrance will require that installation of utilities will be undergrounded. Project development would not involve construction or extension of infrastructure offsite except for the aforementioned utility and site access connections and improvements. It is not anticipated that these improvements would facilitate any other

development in the area. Project development would not remove obstacles to growth through construction or extension of major infrastructure facilities.

Changes in Existing Regulations

Project approval requires a General Plan amendment and a zone change. The two changes would only apply to the 24.68-acre project site and would only allow development in the 5.71-acre Development Area.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Project development would not require construction of new or expanded facilities for fire protection, police protection, schools, or libraries.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Project construction would generate a limited number of short-term construction jobs. The unemployment rate in Los Angeles County in November 2018 was estimated at 4.6 percent (EDD 2019). Thus, construction employment is expected to be absorbed from the regional labor force and is not expected to cause substantial indirect growth by attracting new workers into the region.

Project operation is estimated to employ five people for management and maintenance of the project. Employment in Torrance is forecast to increase from 102,300 in 2012 to 117,600 in 2040, an increase of 15,300 or approximately 15 percent (SCAG 2016). Estimated employment by project operation is well within regional employment growth forecast for the City and would not indirectly cause significant growth.

Project development would add 248 apartment units in Torrance. At full occupancy, the apartments are estimated to house 722 residents (KHR 2017).[1] The population of the City is estimated to increase from 146,500 in 2012 to 159,800 in 2040, an increase of 13,300 or approximately 9 percent (SCAG 2016). The population increase due to project development would be well within the regional population forecast for the City. Development of proposed housing would not indirectly cause significant growth. Nor is it anticipated that the addition of these new residents would indirectly trigger additional population growth in the area.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Project approval would not involve a precedent-setting action that could indirectly cause significant impacts. The requested policy approvals—General Plan amendment, zone change, conditional use permit, Mapping Action, and precise plan of development—are all site specific and do not affect the development standards that apply to any other property.

[1] The estimate, from the Hydraulic Network Analysis for the proposed project, assumes occupancy of two persons per bedroom. Using the estimated average household size in Torrance in 2017, 2.62 persons (CDF 2017), full occupancy is estimated at 650 residents. Thus, 722 residents is a conservative estimate.

11. Organizations and Persons Consulted

11.1 LEAD AGENCY

City of Torrance (Lead Agency)

City Attorneys (Rutan & Tucker, LLP)

Katherine Jenson, Partner

Community Development Department

Danny Santana, Director

Oscar Martinez, Interim Planning Manager

Nina Lang, Planning Associate

Michael Ritchey, Associate Civil Engineer

Ted Symons, Associate Civil Engineer

Public Works Department

Steven Finton, P.E., Engineering Manager

Fire Department

William Samp, Assistant Chief/Fire Marshal

Police Department

Kent Sentinella, Administrative Analyst

Public Library

Hillary Theyer, City Librarian

11. Organizations and Persons Consulted

11.1.1 Consultants

Dudek (Air Quality, Biological Resources, Greenhouse Gas Emissions, and Noise)

Air Quality and Greenhouse Gas Emissions

Jennifer Reed, Air Quality Services Manager

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Laurel Porter, Technical Editor

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Noise

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Neal D. Berliner, Geotechnical Engineer

Kennedy/Jenks Consultants (Environmental Site Assessment)

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KHR Associates (Hydraulic, Drainage, Sewer, and Transportation)

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Paleo Solutions, Inc. (Cultural and Paleontological Resources)

Cultural Resources

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Evelyn Chandler, Cultural Resources Director

Paleontological Resources

Mathew Carson, M.S., Assistant Project Manager

11.1.2 Public Agencies

Department of Toxic Substance Control

Rana Georges, Project Manager, DTSC Site Mitigation and Restoration Program

Los Angeles County Sanitation District

Adriana Raza, Will Serve Program, Facilities Planning Department

Torrance Unified School District

Jorge Gutierrez, Director of Facilities and Operations

11.2 PROJECT APPLICANT AND CONSULTANTS

Reylenn Properties, LLC (Project Applicant)

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John Vang, JD
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12. Qualifications of Persons Preparing EIR

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Cary Nakama Graphic Design	■ AA Computer Graphic Design, Platt College of Computer Graphic Design ■ BA Business Administration: Data Processing and Marketing, California State University, Long Beach

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