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BREA 265 SPECIFIC PLAN

for City of Brea

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Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ac	acre
ADT	average daily traffic
af	acre-foot, acre-feet
afy	acre-feet per year
APN	Assessor's Parcel Number
AQMD	air quality management district
AQMP	air quality management plan
AR4	*Fourth Assessment Report: Climate Change 2007* (Intergovernmental Panel on Climate Change)
AR5	*Fifth Assessment Report: Climate Change 2014*
AST	aboveground storage tank
bgs	below ground surface
BMC	Brea Municipal Code
BMP	best management practices
BOUSD	Brea-Olinda Unified School District
BPD	Brea Police Department
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGEM	California Department of Conservation, Geologic Energy Management Division
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDWC	California Domestic Water Company
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act

Abbreviations and Acronyms

CESA	California Endangered Species Act
CES	CalEnviroScreen
CFC	California Fire Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRMMP	cultural resources mitigation and monitoring plan
CRPR	California Rare Plant Ranking
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DEIR	draft environmental impact report
DMA	drainage management area
DOGGR	Division of Oil, Gas and Geothermal Resources
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
du	dwelling unit
du/ac	dwelling unit per acre
DWR	Department of Water Resources (CA)
EIR	environmental impact report
EO	Executive Order
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act

Abbreviations and Acronyms

FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FIRM	flood insurance rate map
FMMP	Farmland Mapping and Monitoring Program
FMZ	fuel modification zone
FTA	Federal Transit Administration
GHG	greenhouse gases
gpm	gallons per minute
GWP	global warming potential
H&H	hydrology and hydraulic [report]
HAA	Housing Accountability Act
HCD	Housing and Community Development Department (CA)
HCOC	hydrologic conditions of concern
HCP	habitat conservation plan
HRA	health risk assessment
HREC	historical recognized environmental conditions
IFC	International Fire Code
IPCC	Intergovernmental Panel on Climate Change
IRA	identified resource area
ITE	Institute of Transportation Engineers
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LAFCO	Local Agency Formation Commission
LBP	lead-based paint
lbs	pounds
LBV	least Bell's vireo
LCFS	low-carbon fuel standard
LDR	Low Density Residential
LEPC	local emergency planning committee
LHMP	local hazard mitigation plan
LID	low impact development
LOS	level of service
LRA	local responsibility area

Abbreviations and Acronyms

LST	localized significance thresholds
LUST	leaking underground storage tank
MATES	Multiple Air Toxics Exposure Study
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MDR	Medium Density Residential
MEIR	maximum exposed individual resident
mg	million gallons
mgd	million gallons per day
MH	manhole
MMcf	million cubic feet
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MRZ	mineral recovery zone
MS4	municipal separate storm sewer system
MT	metric ton
MWDOC	Municipal Water District of Orange County
MWELO	Model Water Efficient Landscape Ordinance
MWh	megawatt-hour
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NCCP	natural communities conservation plan
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act

Abbreviations and Acronyms

NRHP	National Register of Historic Places
O_3	ozone
OCFA	Orange County Fire Authority
OCHCA-EHD	Orange County Health Care Agency–Environmental Health Division
OCPL	Orange County Public Library
OCP	organochlorine pesticide
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Authority
OCTAM	Orange County Traffic Analysis Model
OEHHA	Office of Environmental Health Hazard Assessment
OPP	organophosphorus pesticide
OSHA	Occupational Safety and Health Administration (US)
PA	planning area
PBF	physical and biological feature
P-C	production-consumption
PCB	polychlorinated biphenyl
PCE	passenger car equivalent
PFYC	Potential Fossil Yield Classification system
PM	particulate matter
POC	pollutant of concern
ppb	parts per billion
ppm	parts per million
µg/m^3	micrograms per meter cubed
PPV	peak particle velocity
PRC	Public Resources Code
PWQMP	preliminary/conceptual water quality management plan
PWWF	peak wet weather flow
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RHNA	regional housing needs assessment
RL	reporting limit
RMS	root mean square

Abbreviations and Acronyms

RPS	renewable portfolio standard
RSL	regional screening level
RTP/SCS	regional transportation plan / sustainable communities strategy
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel Efficient [Vehicles]
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAG	Southern California Association of Governments
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SF_6	sulfur hexafluoride
SIP	state implementation plan
SL	screening level
SMARA	Surface Mining and Reclamation Act
SMP	sewer master plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SoCAB	South Coast Air Basin
SOI	sphere of influence
SRA	state responsibility area
SVOC	semivolatile organic compounds
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SZ	scientific resource zone
TAC	toxic air contaminants
TAZ	traffic analysis zone
TCR	tribal cultural resource
TGD	technical guidance document
TIA	traffic impact analysis
TMDL	total maximum daily load
TPA	transit priority area
tpd	tons per day
TPH	total petroleum hydrocarbons

Abbreviations and Acronyms

TTCP	traditional tribal cultural places
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UWMP	urban water management plan
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment
ZE	zero emissions
ZEV	zero emissions vehicle

1. Executive Summary

1.1 INTRODUCTION

This draft environmental impact report (DEIR) addresses the environmental effects associated with the implementation of the proposed Brea 265 Specific Plan. 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 Brea's CEQA procedures. The City of Brea, as the lead agency, has reviewed and revised 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 (air quality, biological resources, cultural resources, geological resources, hazards and hazardous materials, hydrology and water quality, noise, transportation, 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 EIR Format

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, 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 EIR, 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 EIR.

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 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 EIR.

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 EIR.

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

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

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

- Appendix A: Notice of Preparation
- Appendix B: NOP Comments
- Appendix C: Air Quality /GHG Emissions Data
- Appendix D: Biological Resources Technical Report
- Appendix E: Paleontological and Cultural Resources Assessment
- Appendix F: Geotechnical Assessment
- Appendix G: Third-Party Review of Geotechnical Assessment
- Appendix H: Phase I Environmental Site Assessment
- Appendix I: Focused Phase II Environmental Investigation
- Appendix J: Preliminary/Conceptual Draft Water Quality Management Plan
- Appendix K: Preliminary Hydrology Analysis
- Appendix L: Noise Data
- Appendix M: Public Services Correspondence
- Appendix N: Traffic Study
- Appendix O: VMT Analysis
- Appendix P: Water System Analysis
- Appendix Q: Water Supply Assessment
- Appendix R: Sewer System Analysis

1.2.2 Type and Purpose of This DEIR

This DEIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as for a Project EIR, Program EIRs are typically more conceptual than Project EIRs, with a

more general discussion of impacts, alternatives, and mitigation measures. According to Section 15168 of the CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR gives the lead agency an opportunity to consider broad policy alternatives and programwide mitigation measures, as well as greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive scale.

Agencies prepare Program EIRs for programs or a series of related actions that are linked geographically; logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether an additional CEQA document is necessary. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities may be within the Program EIR's scope, and additional environmental documents may not be required (Guidelines § 15168[c]). When a lead agency relies on a Program EIR for a subsequent activity, it must incorporate feasible mitigation measures and alternatives from the Program EIR into the subsequent activities (Guidelines § 15168[c][3]). If a subsequent activity would have effects outside the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. Even in this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines encourage the use of Program EIRs, citing five advantages:

- Provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR;
- Focus on cumulative impacts that might be slighted in a case-by-case analysis;
- Avoid continual reconsideration of recurring policy issues;
- Consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them;
- Reduce paperwork by encouraging the reuse of data (through tiering). (Guidelines § 15168[h])

1.3 PROJECT LOCATION

The Brea 265 Specific Plan (project site) is in the City of Brea and the City's sphere of influence (SOI) in northern Orange County, as shown on Figure 3-1, *Regional Location*. The project site encompasses 262.1 acres north of State Route 90 (SR-90) and east of SR-57. The 43-acre portion of the project site that is east of Rose Drive is in the incorporated City of Brea, and the remaining 219.1-acre portion of the project site is in the City's SOI, to be annexed into the city. The project site is bordered by Lambert Road/Carbon Canyon Road to the north, Rose Drive to the south, Carbon Canyon Regional Park to the east, and residential uses and Valencia Avenue to the west, as shown on Figure 3-2, *Local Vicinity Map*, and Figure 3-3, *Aerial Photograph*. The project

site is bisected by Valencia Avenue, which runs in a north-south direction, and by Lambert Road, which runs in an east-west direction.

1.4 PROJECT SUMMARY

The Brea 265 Specific Plan proposes a master planned residential community of low- and medium-density residential neighborhoods, parks, recreational amenities, and open space linked together by an extensive trail network that connects to the Tracks at Brea and other regional systems. At buildout, the proposed project would provide up to 450 low-density units and 650 medium-density units—a total of 1,100 units with an overall average density of 4.2 dwelling units per acre. Units may be transferred between land use designations and locations so long as the total number of units does not exceed 1,100 units and the number of units in the planning area (PA) does not exceed the maximum number of dwelling units per acre permitted for the PA's land use designation in the Specific Plan. The maximum density for Low Density Residential (LDR) would be 6.0 du/ac and for Medium Density Residential (MDR) would be 12.0 du/ac. The proposed land use summary is shown in Table 1-1, *Proposed Land Use Summary*. The Conceptual Land Use Plan is shown on Figure 3-4, *Brea 265 Land Use Plan*.

Table 1-1 Proposed Land Use Summary

Land Use	Gross Area (Acres)	Dwelling Units
Residential[1]		
Low Density Residential (LDR)	134.6	450
Medium Density Residential (MDR)	62.9	650
Residential Subtotal	**197.5**	**1,100**
Nonresidential		
Park/Recreation (PR)	15.1	--
Open Space (OS)[2]	47.5	--
Master Plan Right-of-Way	2.0	--
Nonresidential Subtotal		**--**
TOTAL	**262.1 acres**	**1,100 Units**

[1] Units may be transferred between density designations and locations.
[2] Open Space category does not include private open space and recreation areas.

The proposed project would require the following approvals.

- **Certification of Environmental Impact Report (EIR).** The Brea 265 Specific Plan is a discretionary project and is subject to CEQA requirements. The EIR for Brea 265 has been prepared in accordance with CEQA and the CEQA Guidelines. Prior to the approval of the Brea 265 Specific Plan, the EIR must be certified by the City Council in conjunction with approvals of any project related entitlements.

- **General Plan Amendment**. The City of Brea General Plan Land Use Map would be amended from the current "Hillside Residential" and "Low Density Residential." designations to "Brea Specific Plan."

- **Specific Plan/Rezoning.** Approval of the Specific Plan is required for changing the zoning designations of the project site from "Hillside Residential (HR)" and "Single Family Residential (R-1)" to "Brea 265 Specific Plan" and for rezoning the 219.1-acre portion of the Specific Plan area currently in the County and in Brea's SOI as well as the 43-acre portion of the site that is in Brea.

- **Tentative Tract Map.** Approval of a tentative tract map for the subdivision of the 262-acre site for residential development, including park, recreation, and open space uses.

- **Development Agreement.** Approve a development agreement between the City of Brea and the project applicant (Aera Energy) in conjunction with the Brea 265 Specific Plan/rezoning requests. It establishes vesting of development rights and entitlements and identifies project improvements, timing of improvements, and the responsibilities and rights of both the City and the project applicant.

- **Annexation.** After the above discretionary actions have received approvals from the City Council, the 219.1-acre portion of the Brea 265 Site currently in Brea's SOI will be annexed into the city (see Figure 3-23, Annexation Areas), consistent with the 2005 pre-annexation agreement. The request will be processed through the OC LAFCO. A pre-annexation agreement for the property was prepared and approved by OC LAFCO in 2005 between the City of Brea, County of Orange, and Aera Energy. The agreement anticipates annexation of the county territory sometime prior to September 29, 2022, and that a comprehensive planning process would be undertaken for the property to facilitate the annexation into Brea. The land use entitlements listed above will be acted on by the City Council in conjunction with the initiation of the annexation request to annex the unincorporated portion of the project site into the city. At the time of approval by the City Council, the land use entitlements for the 43-acre portion of the project site in the city limits will become effective immediately or as provided for by state law. The above entitlements for the unincorporated 219.1-acre portion of the project site approved by the City Council will take effect upon completion of the annexation process. Additionally, at the time of annexation of the 219.1-acre portion of the project site, the unincorporated portion of Carbon Canyon Regional Park and the Clark-Hatch property will also be annexed.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (Section 15126[a]) states that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

As described in Chapter 7, Alternatives to the proposed project, of this DEIR, the following three development alternatives were identified and analyzed, and their impacts were compared to the impacts of the proposed project.

- No Project/Existing Orange County General Plan Development Alternative

- No Project/Existing City of Brea General Plan Development Alternative

- Higher Density Development Alternative

Selection of the alternatives was based, in part, on their potential ability to reduce or eliminate significant impact of the proposed project determined to be significant and unavoidable, which are impacts related to operational air quality and greenhouse gas (GHG) emissions.

Please refer to Chapter 7 for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following presents a summary of each of the alternatives analyzed in the DEIR. Project objectives are outlined in Sections 3.2 and Section 7.1.2.

1.5.1 No-Project/ Existing Orange County General Plan Development Alternative

Under this alternative, a total of 615 single-family detached units would be developed onsite. The 615 detached single-family units are from the Orange County Transportation Analysis Model (OCTAM) based on the County of Orange General Plan land use designations for the project site. Approximately 16.4 percent (43 acres) of the project site is in the City of Brea, and the remaining 83.6 percent (219.1 acres) is in unincorporated Orange County. Therefore, this alternative assumes that approximately 16.4 percent or 101 units of the 615 single family units would be constructed in the City of Brea, and 514 units would be constructed in unincorporated Orange County. This alternative would generate 5,800 daily trips, reducing the project-related trips from 9,351 trips under the proposed project—a reduction of 3,551 trips or approximately 38 percent. Under this alternative, no attached single-family units or townhome units would be constructed, and 11 affordable housing units would be constructed per the City's Affordable Housing Ordinance, a reduction from the proposed 76 affordable housing units under the proposed project. Under this alternative, the overall development density would be reduced from approximately 4.2 units per acre to 2.3 units per acre. Though more open space area could be provided, no sports park would be developed. Under this alternative, discretionary actions involving Specific Plan, general plan amendment, rezoning, development agreement, and annexation would not be required.

1.5.2 No Project/Existing City of Brea General Plan Development Alternative

Under this alternative, the project site would be developed under the existing Hillside Residential and Low Density Residential land use designations. Pursuant to the General Plan's slope density formula and Brea Municipal Code Section 20.206.060 and Table 20.206.060.B for Hillside Residential, 160 dwelling units are allowed in the 166.2 acres of Hillside Residential designation, a density of 0.96 dwelling unit per acre. And the Low Density Residential land use designation allows a maximum overall density of 6 dwelling units per acre, resulting in a total of 567 units in the 94.5-acre portion of the project site. This alternative does not include the density increase allowed under Section 20.206.060.C.3 or the state density bonus. This alternative would have an overall average density of 2.8 dwelling units per acre. Therefore, under the City's General Plan land use designation, a total of 727 single family detached units would be allowed. This alternative would include 10 percent affordable housing units under the City's affordable housing ordinance, and therefore include 73 affordable housing units. Under this alternative, more open space area would be preserved. However, no sports park would be developed. This alternative would generate approximately 6,856 daily trips, reducing the project-

related 9,351 trips by 2,495 trips or approximately 26.7 percent. Under this alternative, discretionary actions involving precise development review, a hillside development permit, and annexation would be required.

1.5.3 Higher Density Development Alternative

This alternative would increase development density in the 94.5-acre portion of the project site currently designated as Low Density Residential on the west side of Valencia Avenue, preserve 99.6 acres planned for Phase 3 development, and maintain the proposed density in the 68-acre, Phase 1 portion designated as Hillside Residential by the City's General Plan. This alternative would develop Phase 2 area on the west side of Valencia Avenue with 747 units, combining units proposed for Phase 2 (612 units) and Phase 3 (135 units), to increase density to 7.9 dwelling units per acre. The 68-acre, Phase 1 portion of the project site would be developed with 353 units, a density of 5.2 units per acre. Therefore, this alternative would have an overall density of 6.8 dwelling units per acre. It is anticipated that more townhome units and higher density attached units with less building area would be constructed on the west side, and low-density and medium-density units as proposed could be constructed on the east side. This alternative would decrease the overall trips generated by the proposed project due to increase in higher density units. Higher-density residential units have a lower trip generation rate than low density single family units. This alternative would provide the same number of affordable housing units as the proposed project, 76 affordable housing. This alternative would reduce operational air quality and GHG emissions impacts. This alternative would require a general plan amendment, rezoning, and annexation.

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this DEIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override those environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides the Mitigation Measures identified in the DEIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the DEIR must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. No areas of controversy

concerning the proposed project have been identified. This DEIR has taken into consideration the comments received from the various agencies and jurisdictions in response to the Notice of Preparation (NOP). Written comments received during the NOP period, which extended from December 14, 2018, to January 23, 2019, are contained in Appendix B of this DEIR.

1.8 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 EIR. 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.

1. Executive Summary

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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
5.1 AESTHETICS			
Impact 5.1-1: The proposed project would not have a substantial adverse effect on a scenic vista.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.1-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.1-3: The project site is in an urbanized area, and the proposed project would not conflict with applicable zoning and other regulations governing scenic quality.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.1-4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.2 AGRICULTURE AND FORESTRY RESOURCES			
Impact 5.2-1: The proposed project would convert Prime Farmland, Unique Farmland, and Farmland of Statewide Importance—as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency—to nonagricultural use.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.2-2: The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.	No impact.	No mitigation measures are required.	Not applicable.

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Impact 5.2-3: The proposed project would not 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)), and would not result in the loss of forest land or conversion of forest land to nonforest use.	No impact.	No mitigation measures are required.	Not applicable.
Impact 5.2-4: The proposed project would not 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.	No mitigation measures are required.	Not applicable.
5.3 AIR QUALITY			
Impact 5.3-1: Construction activities associated with the proposed project would generate short-term emissions of NOX in exceedance of SCAQMD's threshold criteria.	Potentially significant impact.	AQ-1 Construction and remediation contractors shall, at minimum, use equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for the following activities, unless it can be demonstrated to the City of Brea Building and Safety Division that such equipment is not available: ▪ Remediation phase ground disturbing activities (e.g., site preparation, grading, and trenching) ▪ Phase 1 ground disturbing activities (e.g., site preparation, grading, and trenching) ▪ Phase 1 building/structure construction ▪ Phase 2 ground disturbing activities (e.g., site preparation, grading, and trenching) Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Interim	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
		emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all construction (e.g., grading) plans clearly show the requirement for EPA Tier 4 Interim emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City of Brea. The construction equipment list shall state the makes, models, Equipment Identification Numbers, Engine Family Numbers, and number of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.	
Impact 5.3-2: Long-term operation of the proposed project would generate emissions of VOC in exceedance of SCAQMD's threshold criteria.	Potentially significant impact.	Mitigation Measures GHG-1 and GHG-2.	Significant and unavoidable.
Impact 5.3-3: Long-term operation of the land uses associated with buildout of the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants or toxic air contaminants.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.3-4: Construction-related emissions associated with land uses accommodated under the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants.	Less than significant impact.	No mitigation measures are required.	Not applicable.

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.3-5: Project-related construction activities would result in potentially significant cancer risk impacts to nearby off-site residences.	Potentially significant impact.	Mitigation Measure AQ-1.	Less than significant.
Impact 5.3-6: The proposed project would generate long-term emissions that cumulatively contribute to the nonattainment designations in the SoCAB and therefore conflict with the South Coast AQMD Air Quality Management Plan.	Potentially significant impact.	Mitigation Measures GHG-1 and GHG-2.	Significant and unavoidable.
Impact 5.3-7: The proposed project would not result in other emissions that would adversely affect a substantial number of people.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.4 BIOLOGICAL RESOURCES			
Impact 5.4-1: The proposed project could 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.	Potentially significant impact.	BIO-1 The project applicant shall provide a minimum of 52.86 acres of open space lands offsite within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor as determined by the U.S. Fish and Wildlife Service, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park. The proposed land conservation shall be offered to the Chino Hills State Park for consideration of acquisition. See Figure 5.4-7, *Regional Open Space and Proposed Mitigation Lands Map*. BIO-2 A Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) or Biological Opinion pursuant to Section 7 shall be developed as part of formal consultation with the US Fish and Wildlife Service (USFWS) for impacts to 10.33 acres of occupied and suitable coastal California gnatcatcher habitat. Upon development of the HCP or completion of the Section 7 consultation and issuance of the Biological Opinion, the USFWS can issue incidental take permits for listed species where the HCP or Biological Opinion specifies, at a minimum, the following: (1) The level of impact that will result from the taking, (2) Steps that will minimize and mitigate the impacts, (3) Funding necessary to implement the plan, (4) Alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) Such other measures	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
		that the USFWS may require in accordance with the HCP or the Biological Opinion, as applicable. The project applicant shall perform the following restoration activities offsite within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor, as determined by the U.S. Fish and Wildlife Service, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO 1: ▪ Coastal Sage Scrub Establishment/Restoration (10.33 acres mitigated at 2:1 ratio): 20.66 acres ▪ Prepare Habitat Restoration Plan that will include the following components—Location, Site Preparation Methods, Plant Palette, Planting Methods, Maintenance Requirements, Monitoring and Reporting Procedures, Performance Standards. The project applicant shall begin coastal sage scrub restoration activities (e.g., soil prep, seeding) no later than one year after issuance of the first permit that allows for ground disturbance (e.g., grading permit). It is expected that the USFWS will include monitoring requirements to ensure nesting activities are not directly or indirectly impacted as a result of project initiation. The take of active coastal California gnatcatcher nests, which includes harassment of the bird due to grading noise and vibrations, is not permitted from February 15 through July 1. Therefore, grading and removal of habitat during this time frame shall only be permitted if the following conditions are met to the satisfaction of the USFWS. ▪ During grading, if active nests are found within 500 feet of the grading, the grading activity shall be stopped until such time as mitigation measures are implemented to the satisfaction of the USFWS. There is no guarantee that grading will be allowed to resume during the nesting season. ▪ Before issuance of a clearing/grading permit, if grading or clearing is to occur between February 15 and July 1, the project applicant shall	

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		provide to the City of Brea a letter from a qualified biologist retained by the project applicant, with a scope of work for a coastal sage scrub habitat and coastal California gnatcatcher survey, and a report for the area to be cleared and/or graded, and coastal sage scrub habitat areas within 500 feet of that area. The biologist shall coordinate with the USFWS to determine the appropriate survey methodology. The purpose of the survey is to determine if any active gnatcatcher nests are in the area to be cleared or graded, or in coastal sage scrub habitat within 500 feet of such an area. To be considered qualified, the biologist must provide the City with a copy of a valid Coastal California Gnatcatcher Recovery Permit from the USFWS. The scope of work shall explain the survey methodology for the biological survey and the proposed coastal California gnatcatcher nest monitoring activities during the clearing/grading operation. Should the report show, to the satisfaction of the USFWS, that gnatcatcher nests are not present within the area to be graded/cleared, or within coastal sage scrub habitat located within 500 feet of said area, approval may be granted to commence clearing/grading within the coastal California gnatcatcher nesting season from February 15 through July 1. ▪ If coastal California gnatcatchers are nesting within the area to be graded/cleared, or within coastal sage scrub habitat within 500 feet of said area, no grading will be allowed during this time until mitigation measures are implemented to the satisfaction of the USFWS. ▪ The biologist must attend the City's preconstruction meeting for the project and must be present onsite during all clearing/grading activities to monitor that the clearing/grading activities stay within the designated limits. During this period, the biologist shall also monitor and survey the habitat within the area to be cleared/graded and any habitat within 500 feet of that area for any evidence that a coastal California gnatcatcher nest(s) exists or is being built. If evidence of a coastal California gnatcatcher nest(s) is discovered, the grading operation shall cease in that area and be directed to a location more than 500 feet from the nest(s).	

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		▪ Upon completion of the clearing/grading activities, the applicant's biologist shall submit to the City of Brea and USFWS a biological monitoring report summarizing the observations of the biologist, including whether any coastal California gnatcatchers or evidence of active coastal California gnatcatcher nests were present during clearing and grading activities in the area and any habitat within 500 feet of the area. BIO-3 A Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) or Biological Opinion pursuant to Section 7 shall be developed as part of formal consultation with the US Fish and Wildlife Service (USFWS) for impacts to 1.37 acres of least Bell's vireo habitat. Upon development of the HCP or completion of the Section 7 consultation and issuance of the Biological Opinion, the USFWS can issue incidental take permits for listed species where the HCP or Biological Opinion specifies, at a minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) other measures that the USFWS or CDFW may require as being necessary or appropriate for the HCP or Biological Opinion. The project applicant shall perform the following preservation and/or restoration activities offsite within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor as determined by the U.S. Fish and Wildlife Service, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO 1. ▪ Blue Elderberry Scrub Establishment (1.37 acres mitigated at 2:1 ratio): 2.74 acres ▪ Prepare Habitat Restoration Plan that shall include the following components—Location, Site Preparation Methods, Plant Palette,	

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
		Planting Methods, Maintenance Requirements, Monitoring and Reporting Procedures, Performance Standards. It is expected that the USFWS will include monitoring requirements to ensure nesting activities are not directly or indirectly impacted as a result of project initiation. The take of active least Bell's vireo nests, which includes harassment of the bird due to grading noise and vibrations, is not permitted from April 14 through July 31. Therefore, grading and removal of habitat during this time frame shall only be permitted if the following conditions are met to the satisfaction of the USFWS. ▪ During grading, if active nests are found within 500 feet of the grading, the grading activity shall stop until mitigation measures are implemented to the satisfaction of the USFWS. There is no guarantee that grading will be allowed to resume during the nesting season.	
Impact 5.4-2: The proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; and could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Potentially significant impact.	See Mitigation Measures BIO-1 and BIO-2. BIO-4 Prior to issuance of a grading permit, the project applicant shall obtain a 404 Nationwide Permit from the US Army Corps of Engineers (USACE), a 401 Certification issued by the Regional Water Quality Control Board (RWQCB), and a 1602 Streambed Alteration Agreement (SAA) from the California Department of Fish and Wildlife (CDFW) for impacts to jurisdictional resources. During the permit/certification processes, a Regulatory Habitat Mitigation Monitoring Plan (HMMP) shall be developed and approved by USACE, CDFW, and RWQCB, as outlined in the HMMP. Total impact area that requires mitigation by 404 Nationwide Permit from USACE and 401 Certification from RWQCB shall not be less than 0.602 acre. And total impact area subject to Section 1602 SAA by CDFW mitigation shall not be less than 0.896 acre (0.833 acre of drainage channel and 0.063 acre of riparian habitat). Total impact area subject to Section 1602 SAA is inclusive of the USACE/RWQCB impact area; therefore, mitigation for Section 1602 impacts also address the impacts to USACE/RWQCB jurisdictional resources. Impacts to jurisdictional resources shall be mitigated at a ratio greater than 3:1 (0.896 acre mitigated at 3:1 ratio is 2.688 acres). The project applicant shall establish and/or reestablish 2.74 acres of streambed and associated	Less than significant.

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		blue elderberry woodland as outlined in Mitigation Measure BIO-3. The 2.74 acres will collectively mitigate impacts to 0.896 acre of jurisdictional resources, 1.37 acres of blue elderberry woodland, and 0.03 acre of black willow thicket at a location approved by CDFW and the RWQCB within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO 1. **Regulatory Habitat Mitigation Monitoring Plan** If restoration mitigation (as stated above) is selected, the project applicant shall develop a Regulatory Habitat Mitigation Monitoring Plan (HMMP) for impacts to jurisdictional resources, including black willow thickets (state rarity ranking of S3). The HMMP shall be prepared by a qualified biologist and approved by USACE, CDFW, and RWQCB. The project applicant shall begin restoration activities (e.g., soil prep, seeding, planting) no later than one year after issuance of the first permit that allows ground disturbance (e.g., grading permit). The project applicant shall be fully responsible for implementing the revegetation program until the restoration areas have met the success criteria outlined in the HMMP. The regulatory agencies shall have final authority over mitigation area sign-off. The HMMP shall include, at a minimum, 1) project description, 2) mitigation goals, 3) description of mitigation site, 4) implementation approach, 5) maintenance/monitoring approach, 6) success criteria/contingency measures, and 7) funding mechanism.	
Impact 5.4-3: The proposed project could interfere substantially with the movement of 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.	Potentially significant impact.	Mitigation Measures BIO-1 through BIO-3.	Less than significant.
Impact 5.4-4: The proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially significant impact.	Mitigation Measures BIO-1 through BIO-4.	Less than significant.

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.4-5: The proposed project would not conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	Potentially significant impact.	Mitigation Measures BIO-1 and BIO-2.	Less than significant.
5.5 CULTURAL RESOURCES			
Impact 5.5-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.5-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	Potentially significant impact.	CUL-1 Prior to ground disturbance, a cultural resources mitigation and monitoring plan (CRMMP) shall be prepared and implemented. The CRMMP shall require: ▪ Monitoring during grading and other earth-moving activities in undisturbed sediments. ▪ Treatment plan for potential resources that includes: • Data to be collected. • Requirements for professional identification and/or other special studies as appropriate. • Requirements for curation at an accredited museum for artifacts meeting significance criteria. ▪ A comprehensive final mitigation compliance report that includes: • A catalog of specimens with museum numbers. • An appendix with a letter from the museum stating that it is in possession of the materials. In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist evaluates it.	Less than significant.

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.5-3: Grading activities could potentially disturb human remains.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.6 ENERGY			
Impact 5.6-1: The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.6-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	No impact.	No mitigation measures are required.	Not applicable.
5.7 GEOLOGY AND SOILS			
Impact 5.7-1: The proposed project would not directly or indirectly cause substantial adverse effect, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map.	No impact.	No mitigation measures are required.	Not applicable.
Impact 5.7-2: The proposed project would not directly or indirectly cause substantial adverse effect, including the risk of loss, injury, or death involving strong seismic ground shaking.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.7-3: The proposed project would not directly or indirectly cause substantial adverse effect related to on- or offsite liquefaction, landslide, lateral spreading, subsidence, or collapse.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.7-4: Project development could cause substantial soil erosion or the loss of topsoil.	Less than significant impact.	No mitigation measures are required.	Not applicable.

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Impact 5.7-5: The project site is not located on expansive soils that create substantial direct or indirect risks to life or property.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.7-6: Project development could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially significant impact.	GEO-1 The project applicant shall implement a Paleontological Resource Impact Mitigation Program and conduct full-time monitoring by a qualified paleontologist when disturbing deposits with a Potential Fossil Yield Classification (PFYC) ranking of 3 or greater. If unanticipated fossils are unearthed during construction, work shall be halted in that area until a qualified paleontologist can assess the significance of the find. Sediment samples shall be collected in the deposits and processed to determine the small-fossil potential in the project area, and any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution. Work may resume immediately a minimum of 50 feet away from the find. This procedure shall be included in the Worker Environmental Awareness Program training provided to construction personnel. Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated shall determine the scientific significance of paleontological resources. Fossils are considered to be scientifically significant if one or more of the following criteria apply: 1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct. 2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein. 3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas. 4. The fossils demonstrate unusual or spectacular circumstances in the history of life.	Less than significant.

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		5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation and are not found in other geographic locations. If fossils are considered to be scientifically significant, the fossils shall be curated in perpetuity at an accredited repository after excavations have finished, and nonvertebrate fossils (plants, shells, trace fossils, etc.) may be collected as a representative sample when numerous fossils of the same species are present.	
5.8 GREENHOUSE GAS EMISSIONS			
Impact 5.8-1: Buildout of the proposed project would generate a substantial increase in GHG emissions compared to existing conditions and would have a significant impact on the environment.	Potentially significant impact.	GHG-1 The project developer(s) shall design and build all residential homes to meet/include the following: a) Tier 2 requirements for Division A4.1, Planning and Design, as outlined under Section A4.203.1.2.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code. b) Tier 2 requirements for Division A4.2, Energy Efficiency, as outlined under Section A4.203.1.2.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code. c) Tier 2 requirements for Division A4.3, Water Efficiency and Conservation, as outlined under Section A4.601.5.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code; comply with at least three elective measures selected from Division A4.3 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code. d) No wood-burning or gas-powered fireplaces shall be installed in any of the dwelling units. e) Install a home battery storage unit (e.g., Tesla Powerwall) for all single-family units that are fitted with a solar photovoltaic generation system. At minimum, all installed battery storage units shall meet the requirements in Reference Joint Appendix 12 of the 2022 Building Energy Efficiency Standards.	Significant and unavoidable.

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		f) Install a battery storage unit(s) (e.g., Tesla Powerwall) for all multifamily residential buildings that are fitted with a solar photovoltaic generation system. At minimum, all installed battery storage units shall meet the requirements in Reference Joint Appendix 12 of the 2022 Building Energy Efficiency Standards. g) All buildings will be all electric, meaning that electricity is the only permanent source of energy for water heating; mechanical; heating, ventilation, and air conditioning (HVAC) (i.e., space-heating and space cooling); cooking; and clothes-drying, and there is no gas-meter connection. All major appliances (e.g., dishwashers, refrigerators, clothes washers and dryers, and water heaters) provided/installed shall be electric-powered EnergyStar-certified or of equivalent energy efficiency, where applicable. Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall show provide documentation (e.g., building plans) to the City of Brea Building Division official or his/her designee, to verify implementation of the of the design requirements listed above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City of Brea shall verify implementation of the design requirements specified above. GHG-2 The project developer shall design public-use parking lots that: a) Provide electric vehicle (EV) charging stations. At minimum, the number of EV charging stations shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2. b) Provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2 Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the City of Brea Building Division official or his/her designee, to	

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City of Brea shall verify implementation of the design requirements specified above.	
Impact 5.8-2: Implementation of the proposed project would not conflict with plans adopted for the purpose of reducing GHG emissions.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.9 HAZARDS AND HAZARDOUS MATERIALS			
Impact 5.9.1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.9.2: The proposed project could 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.	Potentially significant impact.	HAZ-1 An additional Phase II Environmental Site Assessment (ESA) shall be performed at the historical sumps and the drainage channel already investigated under the Focused Phase II ESA to better define and evaluate the vertical and lateral extent of impacted soils. In addition, a Phase II ESA shall be prepared to investigate other historical sumps, oil wells, former tank areas, roads, manifolds and pipelines, and the agricultural land that were not included in the Focused Phase II ESA. Phase II ESAs shall include strategic test pits and trenching, near-surface and shallow soil testing, and drilling of deep soil borings at the areas of potential environmental concern identified in the Phase I ESA and the Focused Phase II ESA (DEIR Appendix H and Appendix I). The additional Phase II ESA investigations shall be conducted in accordance with guidelines developed by the Department of Toxic Substances Control (DTSC) and US Environmental Protection Agency (EPA) for site assessments. The Phase II ESA investigation shall be submitted to the City of Brea Community Development Department for review and approval by an independent third-party reviewer. HAZ-2 All cleaning, dismantling, and removal of oil field production tanks shall be conducted in compliance with permitting, sampling, monitoring, and handling requirements of the applicable regulatory oversight agency or agencies. A	Less than significant.

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		Phase II Environmental Site Assessment shall be conducted upon completion of tank and facility removal operations.	
		HAZ-3 If the Phase II Environmental Site Assessment (ESA) testing described in MM HAZ-1 reveals concentrations of contaminants (TPH, VOCs, SVOCs, PCBs, OCPs, OPPs, soil vapor, etc.) above acceptable health-based screening levels for residential exposure, those areas shall be defined and remediated to below the health-based level of concern, and the project applicant shall prepare a remedial action plan (RAP). The RAP shall be reviewed and approved by the appropriate oversight regulatory agencies (Orange County Health Care Agency–Environmental Health Division, Orange County Fire Authority, Regional Water Quality Control Board, etc.) prior to issuance of a grading permit for an affected area. Remediation may include bioremediation, excavation, and disposal of impacted soil. The construction contractor shall implement the recommendations outlined in the RAP.	
		HAZ-4 Verification soil sampling (confirmation sampling) shall be conducted after remediation of impacted soils that exceeded the approved remedial action plan (RAP) criteria. Verification sampling shall be conducted under the direction of the regulatory oversight agency representative and shall be collected and analyzed in compliance with the approved RAP or as directed by the regulatory oversight agency.	
		HAZ-5 The project applicant shall retain an experienced petroleum environmental consultant to document the remediation efforts during all remediation phases, overall site grading, and implementation of the project mitigation measures in accordance with the approved remedial action plan. At completion of the site remediation, site closure reports containing environmental documentation shall be submitted to the appropriate oversight regulatory agencies for approval. A closure letter from the Orange County Health Care Agency shall be obtained to document the completion of remediation activities prior to the issuance of building permits.	
		HAZ-6 Prior to commencing grading operations, the project applicant shall consult with the California Department of Conservation, Geologic Energy Management Division (CalGEM), to ensure that all oil wells on the project site have been identified and are plugged and abandoned in accordance with	

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Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			applicable CalGEM regulations. Any oil well that has not previously been abandoned, as evidenced by the issuance of a "Report of Well Abandonment" issued by CalGEM, shall be plugged and abandoned in accordance with CalGEM regulations and shall meet all CalGEM requirements. Abandonments shall be completed prior to the commencement of grading within 50 feet of such a well. Any previously abandoned well that is within 100 feet of a proposed structure or within a street right-of-way shall be evaluated and reabandoned, if necessary, to meet updated CalGEM standards prior to building permit approval.	
		HAZ-7	No habitable buildings shall be built closer than 10 feet to an abandoned wellbore.	
		HAZ-8	In the event that any crude oil pipelines remain in operation on the project site, they shall be relocated at least 100 feet from any building and buried beneath the ground surface or in compliance with county, state, or federal setback requirements, whichever is greater.	
		HAZ-9	Existing 30-inch SoCal Gas gas line shall be located within a minimum of 10 feet easement and shall not be located within any private residential lot.	
		HAZ-10	Prior to issuance of building permits, soils adjacent to oil wells abandoned in development areas shall be mitigated to meet residential cleanup requirements of an approved remedial action plan.	
		HAZ-11	Prior to issuance of any building permits, any abandoned well within 300 feet of a planned habitable structure shall be mitigated to the current guidelines of the City of Brea Fire Department. All habitable structures within 300 feet of an abandoned well shall follow methane mitigation methods approved by the City's Combustible Soil-Gas Guideline. Any mitigation measure required of habitable structures shall be reflected on any plans submitted for building permits or occupancy permits.	
		HAZ-12	Prior to issuance of any building permit for any Planning Area following remediation and decommission efforts on the areas of the existing oil and gas production operations, the project applicant shall prepare a combustible	

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
		gas/methane assessment study by a registered professional and submit it to the City of Brea Fire Department for review and approval. The study shall meet the requirements of the City's Combustible Soil-Gas Guideline and contain a detailed description of the site investigation, including the methodology and data collection techniques used. If detectable levels of methane are encountered on the project site that exceed the City of Brea Fire Department standards, the project applicant shall submit a mitigation plan to the City of Brea Fire Department and implement remedial measures as directed by the City's Fire Department.	
Impact 5.9-3: The proposed project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.	Potentially significant impact.	Mitigation Measures HAZ-1 through HAZ-12.	Less than significant.
Impact 5.9-4: The project site is on a site that is 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.	Potentially significant impact.	Mitigation Measures HAZ-1 through HAZ-12.	Less than significant.
Impact 5.9-5: The project site is not 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.	No impact.	No mitigation measures are required.	Not applicable.
Impact 5.9-6: Project development would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.9-7: The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	Less than significant impact.	No mitigation measures are required.	Not applicable.

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
5.10 HYDROLOGY AND WATER QUALITY			
Impact 5.10-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; provide substantial additional sources of polluted runoff; or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.10-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.10-3: 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 result in a substantial erosion or siltation on- or off-site.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.10-4: The proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system.	Potentially significant impact.	HYD-1 Prior to approval of a final site improvement plans, the project applicant shall prepare a Final Hydrology and Hydraulic (H&H) report in compliance with the City of Brea's Master Plan of Drainage 2013 requirements for review and approval by the City of Brea Public Works Department. The H&H report shall address and assess all proposed connections to the downstream system, and appropriate mitigation measures shall be submitted to the City of Brea so that the downstream systems are not impacted.	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 5.10-5: The proposed project would not impede or redirect flood flows.	Potentially significant impact.	HYD-2 Prior to recordation of any final subdivision map for areas below the Carbon Canyon Dam, the project applicant shall submit an emergency response plan (Plan) that meets the approval of the Brea Fire Department. The Plan shall provide emergency response protocols, and for the final subdivision map east of Rose Drive within the Carbon Canyon Dam inundation area, the Plan shall also demonstrate compliance with the dam failure inundation buyer notification provisions of state law.	Less than significant.
Impact 5.10-6: The proposed project would not cause the release of pollutants due to project inundation from being in the flood hazard, tsunami, or seiche zones.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.11 LAND USE AND PLANNING			
Impact 5.11-1: Project implementation would not divide an established community.	No impact.	No mitigation measures are required.	Not applicable.
Impact 5.11-2: Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.12 MINERAL RESOURCES			
Impact 5.12-1: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.12-2: The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	No impact.	No mitigation measures are required.	Not applicable.

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
5.13 NOISE			
Impact 5.13-1: Construction activities would result in temporary noise increases in the vicinity of the project site that could exceed standards.	Potentially significant impact.	N-1 Prior to any construction activity such as grading, site preparation, or issuance of building permits, a note shall be provided on construction plans indicating that during construction activities and phasing the project applicant shall be responsible for requiring contractors to implement the following measures to limit construction-related noise to a performance standard of 80 dBA L_{eq} at the property line of the nearest sensitive receptor: ▪ Section 8.20.070 of the Brea Municipal Code limits construction activity to the daytime hours between 7:00 am to 7:00 pm on Monday through Saturday. Construction is not allowed on Sundays and federal holidays. If construction outside of these hours is necessary for construction of a project under the Specific Plan, construction noise shall be limited to the City of Brea exterior noise standards summarized in Table 5.13-3, *City of Brea Exterior Noise Standards*. ▪ During the entire active construction period, equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. ▪ Require that impact tools (e.g., jack hammers and hoe rams) be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. ▪ Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses. ▪ Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors. ▪ Construction traffic shall be limited—to the extent feasible—to approved haul routes established by the City.	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
		▪ At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours as well as the telephone numbers of the City's and contractor's authorized representatives to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City. ▪ Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. ▪ During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws. ▪ Erect temporary noise barriers, where feasible, when construction noise is predicted to exceed the noise standards after other measures have been considered, or occur at nighttime, or when the anticipated construction duration is greater than is typical (e.g., two years or more).	
Impact 5.13-2: Implementation of the proposed project would result in long-term operation-related noise that would not exceed standards.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.13-3: Construction during Plan buildout would generate construction vibration that could exceed standards.	Potentially significant impact.	N-2 Prior to issuance of a building permit for a project requiring pile driving within 135 feet of fragile structures such as historical resources, within 100 feet of nonengineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster), or requiring a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate	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
		potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds—e.g., 0.12 inch per second (in/sec) peak particle velocity (PPV) for fragile or historical resources, 0.2 in/sec PPV for nonengineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry—or the City threshold of 0.003 in/sec root-mean-square (70 vibration decibel [VdB]). If vibration levels would exceed this threshold, alternative uses such static rollers and drilling piles as opposed to pile driving shall be used.	
Impact 5.13-4: The proximity of the project site to an airport or airstrip would not result in exposure of future residents and workers to excessive airport-related noise.	No impact.	No mitigation measures are required.	Not applicable.
5.14 POPULATION AND HOUSING			
Impact 5.14-1: The proposed project would not induce unplanned substantial population growth in an area, directly by proposing residential units and indirectly by providing extension of roads or other infrastructure.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.14-2: The proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	No impact.	No mitigation measures are required.	Not applicable.
5.15 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
Impact 5.15-1: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered fire protection facilities, the construction of which could cause significant	Less than significant impact.	No mitigation measures are required.	Not applicable.

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
environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.				
POLICE PROTECTION				
Impact 5.15-2: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, however, the proposed project could adversely affect service ratios, response times, or other performance objectives for police protection services.	Potentially significant impact.	PS-1	Prior to issuance approval of each tentative tract map, the project applicant shall demonstrate compliance with the site planning guidelines referred to as Crime Prevention Through Environmental Design (CPTED). CPTED is based on the principle that proper design and effective use of buildings and public spaces in neighborhoods can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life. These guidelines are intended to optimize the ability of the police department to respond quickly and effectively to calls for assistance and also to incorporate crime prevention measures into the design of future homes, open space areas, and public trails. Examples of such measures include minimizing vegetation or structural screening that could obstruct visibility into public parks by passing patrol units; installation of special locks and/or electronic security devices; incorporation of practical access control (doors, fences); promote surveillance through minimum security lighting, windows, and landscaping; and provide territorial reinforcement through proper signage and sidewalks.	Less than significant.
SCHOOL SERVICES				
Impact 5.15-3: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services.	Less than significant impact.	No mitigation measures are required.		Not applicable.

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
LIBRARY SERVICES			
Impact 5.15-4: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for library services.	Potentially significant impact.	PS-2 Prior to each building permit, the Project Applicant shall pay library impact fees to the County of Orange to offset its fair share of the costs of providing additional library resources and shall provide proof of payment to the City of Brea. A fair-share cost per unit shall be established in coordination with the County of Orange.	Less than significant.
5.16 RECREATION			
Impact 5.16-1: The proposed project would not increase the use of existing neighborhood and regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.16-2: The proposed project would not include recreational facilities that might have an adverse physical effect on the environment.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.17 TRANSPORTATION			
Impact 5.17-1: The proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.17-2: The proposed project would not conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).	Less than significant impact.	No mitigation measures are required.	Not applicable.

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 5.17-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.17-4: The proposed project would not result in inadequate emergency access.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.18 TRIBAL CULTURAL RESOURCES			
Impact 5.18-1: The proposed project would not 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).	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.18-2: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code section 5024.1(c).	Potentially significant impact.	TCR-1 Prior to the commencement of any ground disturbing activity at the project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleno Band of Mission Indians-Kizh Nation—the tribe that consulted on this project pursuant to Assembly Bill 52 (the "Tribe" or the "Consulting Tribe")—and in concurrence with the City of Brea as the CEQA lead agency. A copy of the executed contract shall be submitted to the City of Brea Planning and Building Department prior to the issuance of any permit necessary to commence a ground-disturbing activity. ▪ The Tribal monitor shall only be present on-site during the construction phases that involve ground-disturbing activities. Ground disturbing activities are defined by the Tribe as activities that may include, but are not limited to, pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project 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
		▪ The Tribal Monitor shall complete daily monitoring logs that provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall be concluded when all ground-disturbing activities on the project site are completed, or when the Tribal Representatives and Tribal Monitor have indicated that all upcoming ground-disturbing activities at the project site have little to no potential for impacting Tribal Cultural Resources. TCR-2 If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project. The following procedures will be carried out for treatment and disposition of the discoveries: ▪ Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 100 feet) until the find can be assessed. ▪ All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist and Tribal monitor approved by the Consulting Tribe. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes. ▪ If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2). ▪ Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall	

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 in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. 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, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.	
5.19 UTILITIES AND SERVICE SYSTEMS			
Impact 5.19-1: The proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. However, the proposed project would require new and expanded water distribution facilities.	Potentially significant impact.	USS-1 The project applicant shall coordinate with the City of Brea to make payments to fund its fair share of the following capital improvements related to offsite water systems, as identified in the City of Brea 2021 Water System Master Plan Update: ▪ Increase pumping capacity to the 790 Zone at Berry Street booster pump station (BPS) by providing an additional high-pressure pump at Beery Street BPS with a minimum capacity of 1,778 gallons per minute (gpm). ▪ Construct new 24-inch pipelines in Valencia Avenue to increase system capacity to fill Valencia Reservoir. • Approximately 1,270 linear feet (LF) of new 24-inch pipeline from the Reservoir inlet/outlet to Sandpiper Way, replacing existing 12-inch pipeline. • Approximately 2,060 LF of new 24-inch pipeline from Lambert Road to Birch Street, replacing existing 12-inch pipeline.	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 5.19-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.19-3: The proposed project would result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Potentially significant impact.	USS-2 The project applicant shall coordinate with the City of Brea to make payments to fund its fair share of the following capital improvements: ▪ Reduce sewer flow downstream of MH 44 by providing one of the following options: • Construct a new 8-inch sewer line (approximately 300 feet) from MH 44 southward in Birch Street to MH 11 in Voyager Avenue. All flow originating upstream of MH 44 shall be diverted to Voyager Avenue, with the existing pipeline that continues down Birch Street plugged at MH 44; or • Construct a new 10-inch sewer line (approximately 1,900 feet) in Birch Street diverting all flow tributary to MH 44 westerly in Birch Street to MH 21 at Birch and Ranger Street.	Less than significant.
Impact 5.19-4: The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	Less than significant impact.	No mitigation measures are required.	Not applicable.
Impact 5.19-5: The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	Less than significant impact.	No mitigation measures are required.	Not applicable.
5.20 WILDFIRE			
Impact 5.20-1: Implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant impact.	No mitigation measures are required.	Not applicable.

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
Impact 5.20-2: 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 impact.	No mitigation measures are required.	Not applicable.
Impact 5.20-3: Project development would not 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 impact.	No mitigation measures are required.	Not applicable.
Impact 5.20-4: Project development could 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.	Potentially significant impact.	Mitigation Measure HYD-2.	Less than significant.

2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

2.1.1 California Environmental Quality Act Compliance

This draft environmental impact report (DEIR) has been prepared to evaluate the potential environmental impacts associated with the proposed Brea 265 Specific Plan project (referred to in this DEIR as the proposed project or project), as required under CEQA, as amended (California Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, Chapter 3, Sections 15000 et seq.).

CEQA requires that all state and local governmental agencies consider the potential environmental consequences of projects over which they have discretionary authority before taking action on those projects. This DEIR has been prepared to satisfy CEQA, including but not limited to the State CEQA Guidelines. An EIR is the public document designed to provide decision makers and the public with an analysis of the potential environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental impacts and to identify alternatives to the proposed project. An 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.

The intent of this DEIR is to provide sufficient information on the potential environmental impacts of the proposed Brea 265 Specific Plan to allow the City of Brea to consider environmental consequences and make an informed decision about whether to approve, modify, or deny approval of the proposed project. The DEIR also serves to inform the public, responsible agencies, and other public agencies about the project. Specific discretionary actions to be considered by the City and other agencies are described in Section 3.4, *Intended Uses of the EIR*.

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 project. This DEIR addresses effects that may be significant and adverse; evaluates alternatives to the proposed project; and identifies mitigation measures to reduce or avoid adverse effects.

2.1.2 Lead Agency and Responsible Agencies

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 sec. 21067). The City of Brea has the principal responsibility for approval of the Brea 265 Specific Plan. For this reason, the City of Brea is the CEQA lead agency for this project.

A "responsible agency" is the public agency which proposes to carry out or approve a project for which a lead agency is preparing or has prepared an environmental document. For the purposes of CEQA, the term "responsible agency" includes all public agencies that have discretionary approval power over the project other than the lead agency.

2.2 NOTICE OF PREPARATION

The City complied with CEQA Guidelines Sections 15082 and 15083 by providing opportunities for responsible and trustee agency participation in the environmental review process as well as opportunity for public consultation with interested organizations and individuals.

The notice of preparation (NOP) was distributed on December 14, 2018, to federal, state, regional, and local government agencies and interested parties to solicit comments and to inform agencies and the public of the proposed project during an extended, 41-day public review period from December 14, 2018, to January 23, 2019. A notice announcing the scoping meeting and availability of the NOP was published in a newspaper of general circulation in Brea on December 14, 2018. The NOP was also posted on the City's website at http://www.cityofbrea.net/projectsinprocess beginning December 14, 2018, to the present. Copies of the NOP were made available at the following locations:

- City of Brea – Planning Division, Level 3: 1 Civic Center Circle, Brea, CA 92821
- Brea Library: 1 Civic Center Circle, Level 1, Brea, CA 92821

The proposed project was described in the NOP (see Appendix A). Potential environmental effects associated with project approval and implementation were identified, and agencies and the public were invited to review and comment on the NOP. Comments on the NOP were received from 9 agencies and 14 individuals and organizations (see Appendix B). Table 2-1 compiles the comment letters received from government agencies during the NOP public review period. The table identifies the section(s) of the DEIR where the issues are addressed.

Table 2-1 Government Agency NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Response/Issue Addressed In:
Agencies			
Orange County Public Works	1/24/2019	The DEIR must clearly identify the possible impacts to Orange County Flood Control District facilities.	Section 5.10, Hydrology and Water Quality.
		The hydrology and hydraulic impacts resulting from the project must be assessed, and the analysis must be consistent with the prevailing criteria of the Orange County Hydrology Manual (OCHM), Addendum No. 1 to the OCHM, the Orange County Flood Control Design Manual, the Orange County Local Drainage Manual, and other related design criteria.	Section 5.10, Hydrology and Water Quality.
		The City of Brea and County of Orange should ensure that floodplains are properly identified and that structures are located outside the FEMA 100-year floodplain, or designed in conformance with local floodplain ordinances, and Federal	Section 5.10, Hydrology and Water Quality.

Table 2-1 Government Agency NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Response/Issue Addressed In:
		Emergency Management Agency.	
		All work within or adjacent to any OCFCD right-of-way shall be conducted so as not to adversely impact the channel's structural integrity, hydraulic flow conditions, access and maintainability.	Section 5.10, Hydrology and Water Quality.
		Potential long-term water quality impacts of the project should be evaluated in accordance with provisions outlines in Section 7 of the County of Orange Drainage Area Management Plan (DAMP).	Section 5.10, Hydrology and Water Quality.
		If the project disturbs one or more acres, the project is required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit.	Section 5.10, Hydrology and Water Quality.
		The proposed project should consider the Trash Amendments Track 1 as it designs BMPs for the proposed project.	Section 5.10, Hydrology and Water Quality.
		How will the drainage for the proposed project, specifically the west side of park above the maintenance road, be sufficiently addressed to ensure that the park is not impacted?	Section 5.10, Hydrology and Water Quality.
		The area between the HOA and Carbon Canyon Regional Park, defensible space clearance should be at minimum 100 feet and maintenance of fuel modification area to be completed by HOA.	Section 5.15, Public Services Section 5.20, Wildfire
		Where is the planned construction stating area, and what, if any, impact will there be on the public accessing the regional park from Carbon Canyon Road?	Chapter 3, Project Description.
		Fencing along HOA and Carbon Canyon Regional Park must be constructed in a way that would not allow for homeowners to create independent gates and access into the park.	Chapter 3, Project Description.
		The proposed project should provide opportunities for the City and developer to work with the County to ensure regional bikeway and trail requirements are met per the General Plan.	Chapter 3, Project Description.
		Requests that a copy of the Traffic Study be submitted to OC Traffic Engineering.	Noted.
Caltrans	1/23/2019	Requests a traffic analysis and queue analysis for all ramps to SR-142 and SR-57.	Section 5.17, Transportation
		Requests the Traffic Management Plan (TMP) for Caltrans to review and comment.	Section 5.17, Transportation
		Requests that all works within Caltrans rights-of-way be submitted to the Permits Branch for review & comment.	Section 5.17, Transportation
		Directs the City/consultant to use HCM 2010 for Caltrans signals analysis.	Section 5.17, Transportation
		Requests adequate connections to the bicycle network near the project site.	Chapter 3, Project Description.
		All projects of one acre or more of soil disturbance will be subject to the requirements of the NPDES program.	Section 5.10, Hydrology and Water Quality.
		Any work performed within Caltrans rights-of-way will require discretionary review and approval by Caltrans, and an encroachment permit will be required prior to construction.	Section 5.17, Transportation
City of Yorba Linda	1/23/2019	Impacts related to access and circulation along Rose Drive must be addressed in detail. Traffic impacts on Rose Drive and other proximal local roadways and intersections within the City of Yorba Linda must be quantitatively addressed based on the City of Yorba Linda's thresholds of significance.	Section 5.17, Transportation

2. Introduction

Table 2-1 Government Agency NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Response/Issue Addressed In:
		Excessive speed has been well documented along Rose Drive, and the DEIR should consider the effect of the proposed project's access points along this segment of Rose Drive on vehicle speeds and consider signalization and/or other traffic-calming measures to mitigate excessive speeds.	Section 5.17, Transportation
		The DEIR must determine roadway and/or intersections impacts along Rose Drive, Imperial Highway, and Yorba Linda Boulevard among other potentially affected roadways. The analysis should consider what additional east and westbound SR-91 commuter "cut-through" traffic (that presently diverts via Carbon Canyon Road as an alternate route to the SR-91) may be encouraged to alternately divert through the City of Yorba Linda upon project buildout via Rose Drive, Imperial Highway, La Palma Avenue, and Gypsum Canyon Road due to increased project-related congestion at the intersection of Valencia Avenue and Lambert Road/Carbon Canyon Road.	Section 5.17, Transportation
		The DEIR should provide a detailed discussion of the visual impacts of the proposed project as viewed from existing Park and Redwood Grove, as well as residential uses within Vista Del Verde to the immediate east. Changes in the aesthetic environment pertaining to scenic vistas and visual character should be addressed as required under the CEQA Guidelines.	Section 5.1, Aesthetics
		The DEIR should identify opportunities to link proposed trails to existing trails within the City of Yorba Linda to provide an expanded network of regional trails.	Chapter 3, Project Description Section 5.16, Recreation
Los Angeles County Fire Department	1/16/2019	The project site is entirely within the City of Brea, which is not a part of the emergency response area of the Los Angeles County Fire Department and therefore would not have any impact on the LACFD.	Noted.
LAFCO	1/16/2019	The DEIR should include municipal service responsibilities such as, police protection, fire protection, solid waste, library, animal control, code enforcement, education, maintenance of public facilities (e.g., roads, landscaping, street sweeping) and general government services.	Section 5.15, Public Services.
OCTA	1/21/2019	Recommends that the Specific Plan include improvements along both Lambert Road-Carbon Canyon Road and Valencia Avenue, which will provide bikeways consistent with City of Brea and County of Orange master plan documents.	Chapter 3, Project Description. Section 5.17, Transportation
		Recommends to include plans to provide a paved off-road bikeway as identified on the County of Orange "Major Riding & Hiking Trails and Off-Road Paved Bikeways" map.	Chapter 3, Project Description.
		Recommends the Specific Plan include short- and long-term bicycle parking and bicycle facilities for residents and guests, considering a short-term parking ratio of one bicycle space for each four units, and inclusion of a secure ground floor indoor bicycle storage area for long-term bicycle parking.	Chapter 3, Project Description Section 5.16, Recreation.
		Notes that Rose Drive, currently built as two lanes, is classified as a primary arterial highway that is planned for four lanes per its MPAH classification, and the proposed project should consider the planned buildout of Rose Drive as it relates to potential future right-of-way needs.	Section 5.17, Transportation

Table 2-1 Government Agency NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Response/Issue Addressed In:
SCAG	1/22/2019	SCAG requests that the EIR include consistency analysis with the applicable 2016 RTP/SCS Goals. And the comment recommends that the EIR review the Final Program Environmental Impact Report (Final PEIR) for the 2016 RTP/SCS for guidance as appropriate.	Section 5.11, Land Use
City of La Habra	1/18/2019	The proposed project could affect the signal synchronization related to vehicular trips to and from La Habra, and the DEIR should analyze the potential impacts to La Habra.	Section 5.17, Transportation
		At a minimum, the DEIR should study the intersections of Lambert Road/Palm Street, Lambert Road/Harbor Boulevard, La Habra Boulevard/Harbor Boulevard, and Harbor Boulevard/Imperial Highway based on the trip distribution pattern identified in the Traffic Study. And a condition should be placed on the project that requires the developer to contribute their fair share traffic impact fees.	Section 5.17, Transportation
		Imperial Highway in the City of La Habra is on the Orange County Congestion Management Program Highway System, and the intersection of Imperial Highway/Harbor Boulevard is a monitored intersection on the Orange County CMP system, and the DEIR should address CMP impacts at this intersection.	Section 5.17, Transportation
SCE	1/2/2019	Asks if the development will cause any of SCE facilities (mainly 50 kV and above) to be relocated, and if so, the scope of relocation should be included in the EIR.	Chapter 3, Project Description.

The NOP and scoping process are used to help determine the scope of the environmental issues to be addressed in the EIR. The City determined at the time of the NOP that the EIR will address every topic on the CEQA Guidelines Appendix G Checklist Form. Because the City decided to prepare an EIR during initial review of the proposed project, as permitted by CEQA Guidelines Section 15063, no Initial Study was required to determine whether the proposed project required an EIR, and no Initial Study was prepared. The NOP identified that all environmental categories have the potential to result in significant impacts, and therefore they are addressed in this DEIR.

The City held a scoping meeting for the EIR at 5:00 pm on January 16, 2019, at the Brea City Hall, Room B, 1 Civic Center Circle, Brea, Orange County, California. The purpose of the scoping meeting was to provide an additional forum for the public and other agencies to provide input on the environmental issues that should be addressed in the EIR. A total of 13 comment cards were collected during the scoping meeting, and these are included in Appendix B.

2.3 SCOPE OF THIS EIR

Based in part on the State CEQA Guidelines Appendix G Environmental Checklist Form, City staff determined that an EIR should be prepared for the proposed project. An Initial Study is not required to determine that an EIR will be prepared; therefore, the City began its work directly on the EIR process without preparing an Initial Study. The scope of the EIR was determined based on review of the current

conditions of the project site and surrounding area, the scope of the proposed project, 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 State CEQA Guidelines, the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information in Chapter 3, *Project Description*, establishes the basis for analyzing future, project-related environmental impacts. However, further environmental review by the City may be required as more detailed information and plans are submitted on a project-by-project basis.

2.3.1 Potentially Significant Adverse Impacts

All environmental areas from the CEQA Guidelines Appendix G Environmental Checklist Form have been identified as having potentially significant impacts if the proposed project is implemented:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

2.3.2 Unavoidable Significant Adverse Impacts

This DEIR identifies two 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. The impacts that the DEIR found to be significant and unavoidable are:

- Air Quality
- GHG Emissions

2.4 INCORPORATION BY REFERENCE

Some documents 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 Brea Planning Division, Level 3, 1 Civic Center Circle, Brea, CA 92821.

- **Brea General Plan:** The Brea General Plan serves as the major blueprint for directing growth in Brea and regulates the existing land uses in the project site. The General Plan addresses existing conditions in the City, including physical, social, cultural, and environmental resources and opportunities. The General Plan also looks at trends, issues, and concerns that affect the region; includes City goals and objectives; and provides policies to guide development and change.

- **Brea Municipal Code:** The Brea Municipal Code is a set of laws governing the City of Brea and covers all aspects of City regulations, including zoning, permitted uses and standards, and various development requirements. Zoning district standards are also included in the code. Where applicable, code sections are referenced throughout the DEIR.

- **Brea 265 Specific Plan.** The Brea 265 Specific Plan implements a series of objectives that have been crafted to ensure the project develops as a high-quality master planned community. It provides various plan elements that include Land Use Plan, Circulation Plan, Grading Plan, Infrastructure Plan, and Public Facilities and Services. Each of these plan elements work in tandem with the others to establish a framework for Brea 265. The Specific Plan also provides design guidelines, development regulations and standards, and implementation and administration that are necessary to implement the various objectives of the Specific Plan.

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 address shown on the title page of this document. Upon completion of the 45-day review period, the City of Brea will review all written comments received and prepare written responses to these comments. 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 Brea City Council for potential certification as the environmental document for the proposed project. All persons who comment on the DEIR will be notified of the availability of the FEIR and the date of all public hearings related to this project.

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

- **City of Brea – Planning Division, Level 3.** 1 Civic Center Circle, Brea, CA 92821
- **Brea Library.** 1 Civic Center Circle, Level 1, Brea, CA 92821

The DEIR is also available for electronic download from the City's website:
http://www.cityofbrea.net/projectsinprocess

2.6 MITIGATION MONITORING

CEQA, in 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 Section 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted.

The Mitigation Monitoring Program for the Brea 265 Specific Plan will be completed as part of the Final EIR, prior to consideration of the project by the Brea City Council.

3. Project Description

3.1 PROJECT LOCATION

The Brea 265 Specific Plan (project site) is in the City of Brea and the City's sphere of influence (SOI) in northern Orange County, as shown on Figure 3-1, *Regional Location*. The project site encompasses 262.1 acres north of State Route 90 (SR-90) and east of SR-57. The 43-acre portion of the project site that is east of Rose Drive is in the incorporated City of Brea, and the remaining 219.1-acre portion of the project site is in the City's SOI, to be annexed into the city. The project site is bordered by Lambert Road/Carbon Canyon Road to the north, Rose Drive to the south, Carbon Canyon Regional Park to the east, and residential uses and Valencia Avenue to the west, as shown on Figure 3-2, *Local Vicinity Map*, and Figure 3-3, *Aerial Photograph*. The project site is bisected by Valencia Avenue, which runs in a north-south direction, and by Lambert Road, which runs in an east-west direction.

3.2 STATEMENT OF OBJECTIVES

Objectives for the Brea 265 Specific Plan will aid decision makers in their review of the project and associated environmental impacts. These objectives have been refined throughout the planning and design process for Brea 265:

1. Organize the land plan to facilitate the provision of proposed land uses and amenities.

2. Integrate a comprehensive walking and biking trail system that provides physical and visual connections to enhance walkability, linking neighborhoods to key amenities and open space areas within Brea 265 and to the existing trails in the greater Brea community, including Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park.

3. Enhance public benefits by incorporating a variety of parks, paseos, parkways, and open space features that meet the recreational needs of the residents, enhance pedestrian orientation, and contribute to community aesthetics.

4. Provide a housing mix ranging from conventional single-family homes and detached cluster homes to townhomes and apartments, including workforce and affordable housing units.

5. Incorporate development standards specifically crafted for the latest residential design concepts and neighborhood designs that are popular with homebuyers.

6. Provide flexibility in plan implementation to allow for changes in future market conditions.

7. Use the Specific Plan as a tool to implement the City's affordable housing requirements and the State's Density Bonus Law.

8. Establish a distinctive community character through place-making elements that embrace and respect the site's oil industry history and special physical attributes.

9. Incorporate sustainable design and development approaches, including walkable communities, water quality features, and water- and energy-efficient landscape and building design. Encourage the use of sustainable building materials, where feasible.

10. Ensure appropriate phasing and financing for community facilities, including circulation and streetscape improvements; water, sewer, and drainage facilities; and parks and recreational facilities.

11. Provide the fire management plan to reduce the threat of wildfire and create a fire-resistant buffer between homes and the adjacent open space areas of Carbon Canyon Regional Park.

3.3 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. (14 Cal. Code of Reg. § 15378[a])

3.3.1 Description of the Project

The Brea 265 Specific Plan proposes a master planned residential community of low- and medium-density residential neighborhoods, parks, recreational amenities, and open space linked together by an extensive trail network that connects to the Tracks at Brea and other regional systems. At buildout, the proposed project would provide up to 450 low-density units and 650 medium-density units—a total of 1,100 units with an overall average density of 4.2 dwelling units per acre. The maximum of 1,100 residential units would include 76 affordable housing units in accordance with the approved Development Agreement and 1,024 market rate units. The proposed project also provides up to 15.1 acres of parks/recreations uses, 47.5 acres of open space, and 2.0 acres of rights-of-way.

The proposed project would be phased and constructed based on market conditions. The Brea 265 Specific Plan includes landscape, architecture, and community design guidelines for future development within the projects site. Units may be transferred between land use designations and locations so long as the total number of units does not exceed 1,100 units and the number of units in the planning area (PA) does not exceed the maximum number of dwelling units per acre permitted for the PA's land use designation in the Specific Plan. The maximum density for Low Density Residential (LDR) would be 6.0 du/ac and for Medium Density Residential (MDR) would be 12.0 du/ac. The proposed land use summary is shown in Table 3-1, *Proposed Land Use Summary*. The Conceptual Land Use Plan is shown on Figure 3-4, *Brea 265 Land Use Plan*. One of the

fundamental design principles of the proposed project is to create a walkable environment integrated with parks, open space, and trails while providing diverse, multi-income housing choices; a pedestrian-focused public realm; sustainable site planning, landscaping, and building design elements; and natural open space preservation. The proposed project allows for a public safety/civic uses on a 1.0-acre site on the northwest corner of Lambert and Valencia within the time frame described in the approved Development Agreement.

Table 3-1 Proposed Land Use Summary

Land Use	Gross Area (Acres)	Density Range (DU/AC)	Dwelling Units
Residential[1]			
Low Density Residential (LDR)	134.6	1.0–6.0	450
Medium Density Residential (MDR)	62.9	6.1–12.0	650
Residential Subtotal	**197.5**		**1,100**
Nonresidential			
Park/Recreation (PR)	15.1	—	—
Open Space (OS)[2]	47.5	—	—
Master Plan Right-of-Way	2.0	—	—
Nonresidential Subtotal	**64.6**	**—**	**—**
Total	**262.1 acres**	**4.2**	**1,100 units**

[1] Units may be transferred between density designations and locations.
[2] Open Space category does not include private open space and recreation areas.

Table 3-2, *Proposed Land Category Statistical Summary by Planning Area*, provides detailed land use information for each PA. The proposed project includes development regulations and standards for the proposed land uses. Brea 265 is divided into 13 PAs. Each PA belongs to one of five land use categories:

- **Residential.** The proposed project would provide two residential categories—Low Density Residential (LDR) and Medium Density Residential (MDR)—and include 450 LDR units and 650 MDR units totaling 1,100 units, with an overall average density of 4.2 dwelling units per acre at buildout.

  - *Low Density Residential (LDR): Planning Areas 3, 9, 10, and 11*. The LDR category includes 450 dwelling units within four planning areas on approximately 134.6 acres at a target density of 3.3 dwelling units per acre. The LDR category provides for development of detached and attached single-family dwellings. The lower-density range is intended to complement the surrounding open space areas and existing landforms to create neighborhoods that respond to the existing slopes and topography.

  - *Medium Density Residential (MDR): Planning Areas 1, 7, and 8*. The MDR category includes 650 dwelling units within three planning areas on approximately 62.9 acres at a target density of 10.3 dwelling units per acre. The MDR category provides for development of detached and attached single-family homes, townhouses, condominiums, and duplexes. The MDR planning areas are east of Rose Drive in the southern portion of the Brea 265 site, and to the west of Valencia Avenue and south of Lambert Road.

- **Open Space (OS): Planning Areas 5 and 13.** The proposed project includes approximately 47.5 acres of land under the Open Space (OS) land use category, which allows for slopes and landscaping as well as

passive outdoor activities such as walking trails, mountain biking, and nature viewing. Open space is the existing or undeveloped area that includes improved setbacks, trails, and slope areas. Landscaped open space includes the landscape improvement areas that enhance the overall character of the Specific Plan community. The OS planning areas include steep slopes (over 30 percent) in the eastern portion of the project site, landscaped slopes and setbacks along arterial streets, water quality features, and fuel modification zones. Figure 3-5, *Parks and Open Space Plan*, illustrates OS planning areas within the project site.

- **Parks/Recreational (PR): Planning Areas 2 and 6.** The PR category totals 15.1 acres, including a 13-acre sports park to the west of Valencia Avenue and a 2.1-acre staging area park to the east of Rose Drive. The PR areas are intended to provide recreational amenities, gathering areas, and focal points and to facilitate trail connections between Brea 265, the greater Brea community, and Carbon Canyon Regional Park. In addition to the PR planning areas, a planned pedestrian and bicycle trail network linking homes to parks and open space areas within and outside the Brea 265 community will promote walking and cycling as an appealing and practical mode of mobility (see Figure 3-6, *Nonvehicular Circulation Plan*).

- **Right-of-Way (ROW): Planning Areas 4 and 12.** The proposed project includes approximately 1.2 acres along Carbon Canyon Road and 0.8 acre along Lambert Road under the ROW land use category.

Table 3-2 Proposed Land Use Category Statistical Summary by Planning Area

Planning Area (PA)	Land Use Category	Gross Area (AC)	Density Range (DU/AC)[1]	Target Density (DU/AC)[2]	Dwelling Units (DU)[3]
1	MDR	13.9	6.1–12.0	10.3	143
2	PR	2.1	—	—	—
3	LDR	109.4	1.0–6.0	3.2	345
4	ROW	1.2	—	—	—
5	OS	40.5	—	—	—
6	PR	13.0	—	—	—
7	MDR	23.2	6.1–12.0	12.0	278
8	MDR	25.8	6.1–12.0	8.9	229
9	LDR	14.3	1.0–6.0	3.8	54
10	LDR	9.9	1.0–6.0	5.2	51
11[4]	LDR	1.0	1.0–6.0	—	—
12	ROW	0.8	—	—	—
13	OS	6.5	—	—	—
	Specific Plan Total	**262.1 acres**		**4.2**	**1,100**

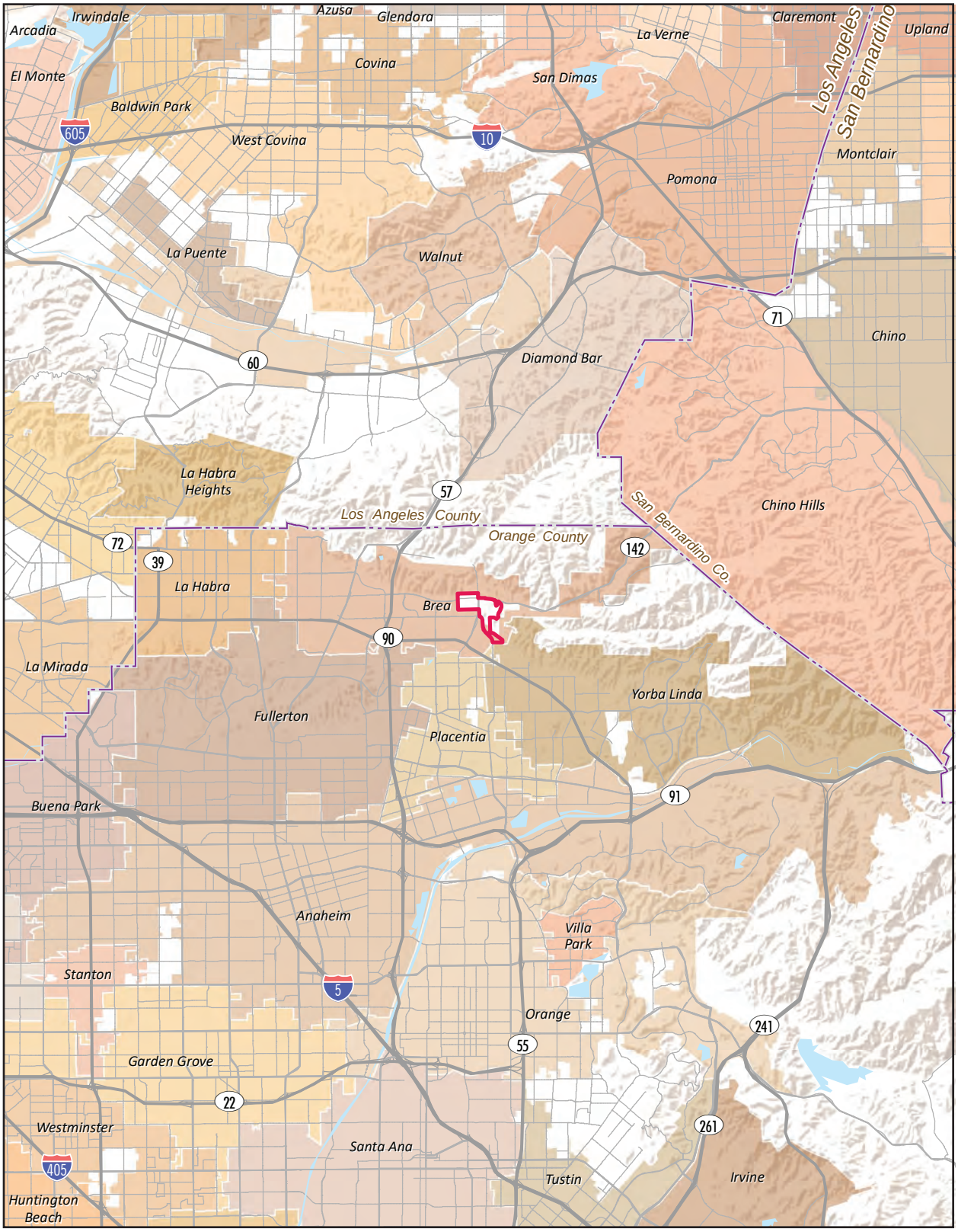
[1] Density Range is the range between the minimum and maximum number of dwelling units per acre permitted for the planning area's land use designation, as defined by the Orange County General Plan.

[2] Target Density is the number of dwelling units per acre for the planning area as proposed by the Brea 265 Specific Plan and described in Table 3-2 of the Brea 265 Specific Plan). The proposed number of dwelling units in an implementing subdivision application may exceed the target density specified in any planning area without necessitating the preparation of a Specific Plan Amendment or Substantial Conformance provided that: 1) the proposed density transfer in the implementing subdivision application is within the density range for the planning area as described in Table 3-2 of the Brea 265 Specific Plan; and 2) the maximum number of 1,100 dwelling units for the entire Specific Plan is not exceeded.

[3] Transfer of dwelling units from one residential planning area to another within a residential land use category is permitted pursuant to the provisions in Section 6.3, Density Transfer, of the Brea 265 Specific Plan, provided that the maximum total of 1,100 dwelling units within the Brea 265 area is not exceeded.

[4] PA 11 provides for a reserved site for a public safety/civic uses within the time frame described in the Brea 265 Development Agreement. See Section 5.4.1 of the Brea 265 Specific Plan for permitted uses in the LDR residential category.

Figure 3-1 - Regional Location
3. Project Description



Project Site Boundary

Note: Unincorporated county areas are shown in white.

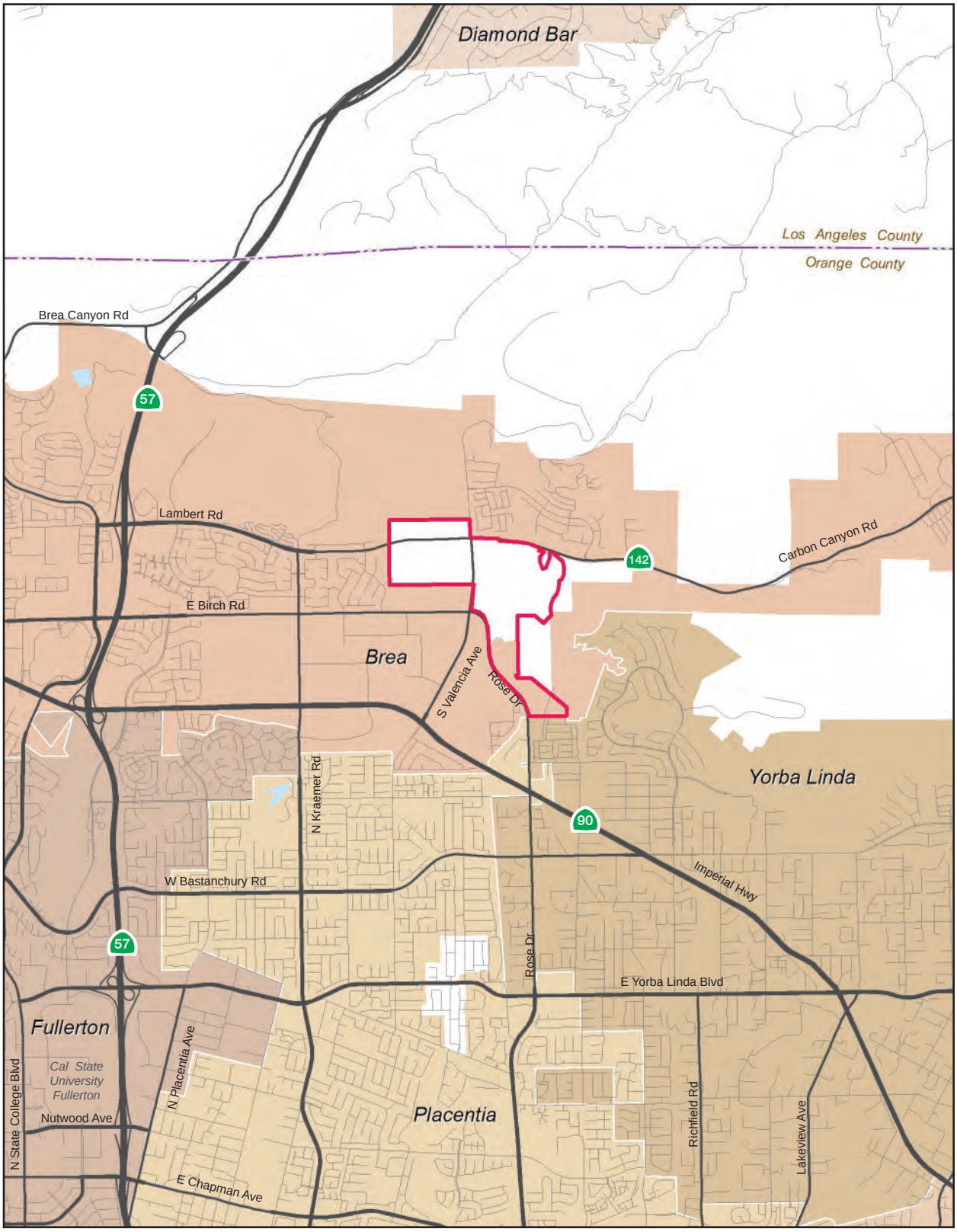
Source: ESRI, 2018

0 3
Scale (Miles)

3. Project Description

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Figure 3-2 - Local Vicinity
3. Project Description



Project Site Boundary

Note: Unincorporated county areas are shown in white.

Source: ESRI, 2018

0 4,000
Scale (Feet)

3. Project Description

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Figure 3-3 - Aerial Photograph
3. Project Description



Project Site Boundary

0 1,500
Scale (Feet)

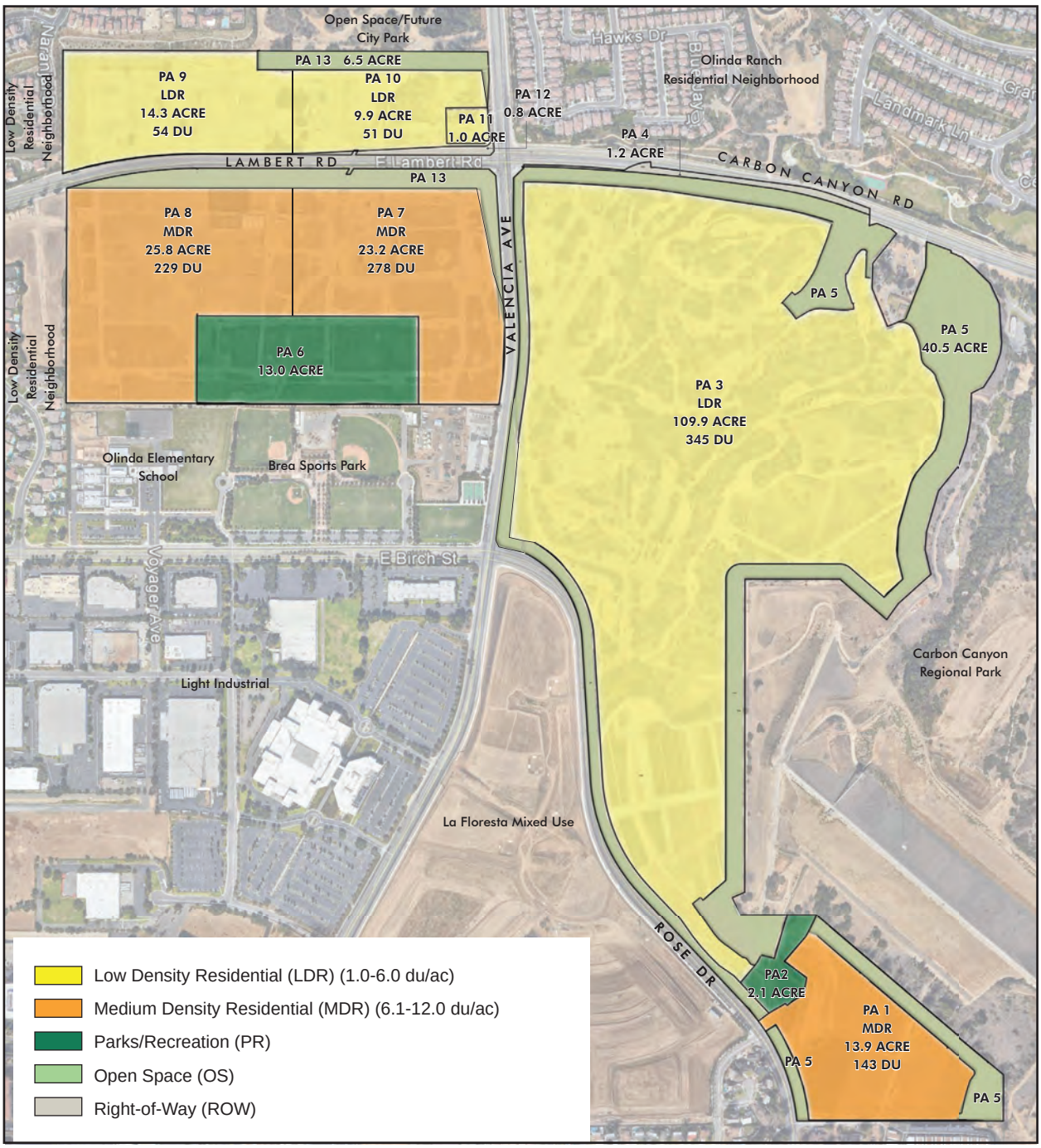
Source: Nearmap, 2021

3. Project Description

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Figure 3-4 - Brea 265 Land Use Plan

3. Project Description



Source: KYGY Group, 2022

3. Project Description

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Figure 3-5 - Parks and Open Space Plan



Source: KYGY Group, 2022

3. Project Description

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Figure 3-6 - Nonvehicular Circulation Plan

3. Project Description



Public Multi-Puprose Trails:

20' Wide Dual Tread
Multi-Purpose Trail
10' Asphalt + 10' D.G.

14' Wide Trail - AC Paving
Center Striped
10' Asphalt = (x2) 2' Shoulder

On-street Bikeway

Existing Trail

N.A.P - Potential Future Trail Access

Pedestrian Under Crossing

Potential Future Access

0 1,000
Scale (Feet)

Source: KYGY Group, 2022

3. Project Description

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Once the project entitlements are complete and prior to the phased development, all on-site oil operations would be discontinued and abandoned, and wells and production facilities would be remediated in accordance with federal, State, and local regulations in advance of implementing a given project phase. At buildout, no residual oil operations will remain in the proposed residential community.

3.3.1.1 PROPOSED GENERAL PLAN LAND USE AND ZONING DESIGNATIONS

The 262.1-acre project site is currently designated Hillside Residential and Low Density Residential by the Brea General Plan, as shown on Figure 3-7, *Existing and Proposed General Plan Land Use Designations*. Approximately 43 acres are within Brea's corporate boundaries and designated Hillside Residential, and the remaining 219.1 acres are within unincorporated Orange County and in the southern portion of Brea's SOI. Approximately 124.6 acres of the 219.1-acre portion is designated Hillside Residential, and 94.5 acres are designated Low Density Residential. The proposed project would amend the existing General Plan designations to "Brea 265 Specific Plan," as shown on Figure 3-7. The General Plan amendment will take effect upon completion of the annexation process.

The proposed project would change the zoning designations of the project site from "Hillside Residential" and "Single Family Residential" to "Brea 265 Specific Plan," as shown on Figure 3-8, *Existing and Proposed Zoning Designations*.

3.3.1.2 LANDSCAPE DESIGN

The Brea 265 landscape design guidelines would be used in conjunction with the City of Brea's guidelines, the project fuel modification plans, and appropriate federal, state, and city codes. A rich variety of plant species would be used, with appropriate color, texture, and size, and sustainable drought-tolerant or water-wise plant materials with proven adaptation to the local climate, as well as joint use water quality features that efficiently address storm water management. All landscape and irrigation plans would be prepared by a licensed California Landscape Architect and submitted to the City for review and approval prior to starting construction. All submissions would also demonstrate compliance with California's Model Water Efficient Landscape Ordinance (MWELO).

The landscaping of the public spaces, including the community entries, street parkways, parks, trails, and open space, is a major component of the overall community design envisioned for Brea 265. Figure 3-9, *Master Landscape Plan*, provides a detailed rendered view of the overall project site and proposed landscaping and vegetation.

3.3.1.3 PARKS AND RECREATION

The proposed project would provide approximately 15.1 acres of public park space, which includes one sports park and one staging area park. The proposed 15.1 acres of public park space does not include private recreation spaces within each planning areas, which would be elements of future development plan submittals.

Staging Area Park

Staging Area Park would be in the southernmost portion of the project site near the "T" intersection of Rose Drive and Vesuvius Drive. The Staging Area Park provides the staging area, pedestrian/bike, and public trail connections shown on Figure 3-10, *Staging Area Park*. Some of the park amenities may include shade structure with picnic tables and trash receptacles, restroom with drinking fountain and bike racks, and parking, as shown on Figure 3-10. The park's trailhead would allow residents to access neighboring Carbon Canyon Regional Park and Chino Hills State Park as well as other areas of the community through multiple accessible routes. The gated parking area is open to the public during the operating hours.

Sports Park

A 13-acre Sports Park would be provided immediately north of the existing Brea Sports Park. Figure 3-11, *Sports Park*, shows the location of the Sports Park addition and amenities that may be provided. As shown, the Sports Park would provide a baseball field, tennis courts, soccer/football field, pickleball courts, a full basketball court, tartan track with fitness stations, innovative play area, shade structure, concession stand (approx. 900 square feet), restrooms with drinking fountain and bike racks, team warmup field, and parking (approx. 134 spaces).

3.3.1.4 PRIMARY ENTRIES

Brea 265 would provide four primary entries with entry monuments at: the intersection of Valencia Avenue/entry drive east and west of Valencia Avenue (B Street and HH Drive), the intersection of Rose Drive and Vesuvius Drive (AA Street), the intersections of Lambert Road/entry drive into the neighborhoods north and south of Lambert Road (NN Drive and MM Drive), and Rose Drive/entry drive (P Street). Two of the four primary entries would be gated, the east entry drive at Valencia Avenue and B Street and the east entry drive at Rose Drive and P Street. The primary entry treatment includes project monument sculpture/art, project signage on the low board form wall, specimen canopy trees and accent shrubs, and skyline wind row trees along the community trail as shown on Figure 3-12, *Primary Entry Plan*. Figure 3-12 also shows the location of the gated community entry at Valencia Avenue and B Street.

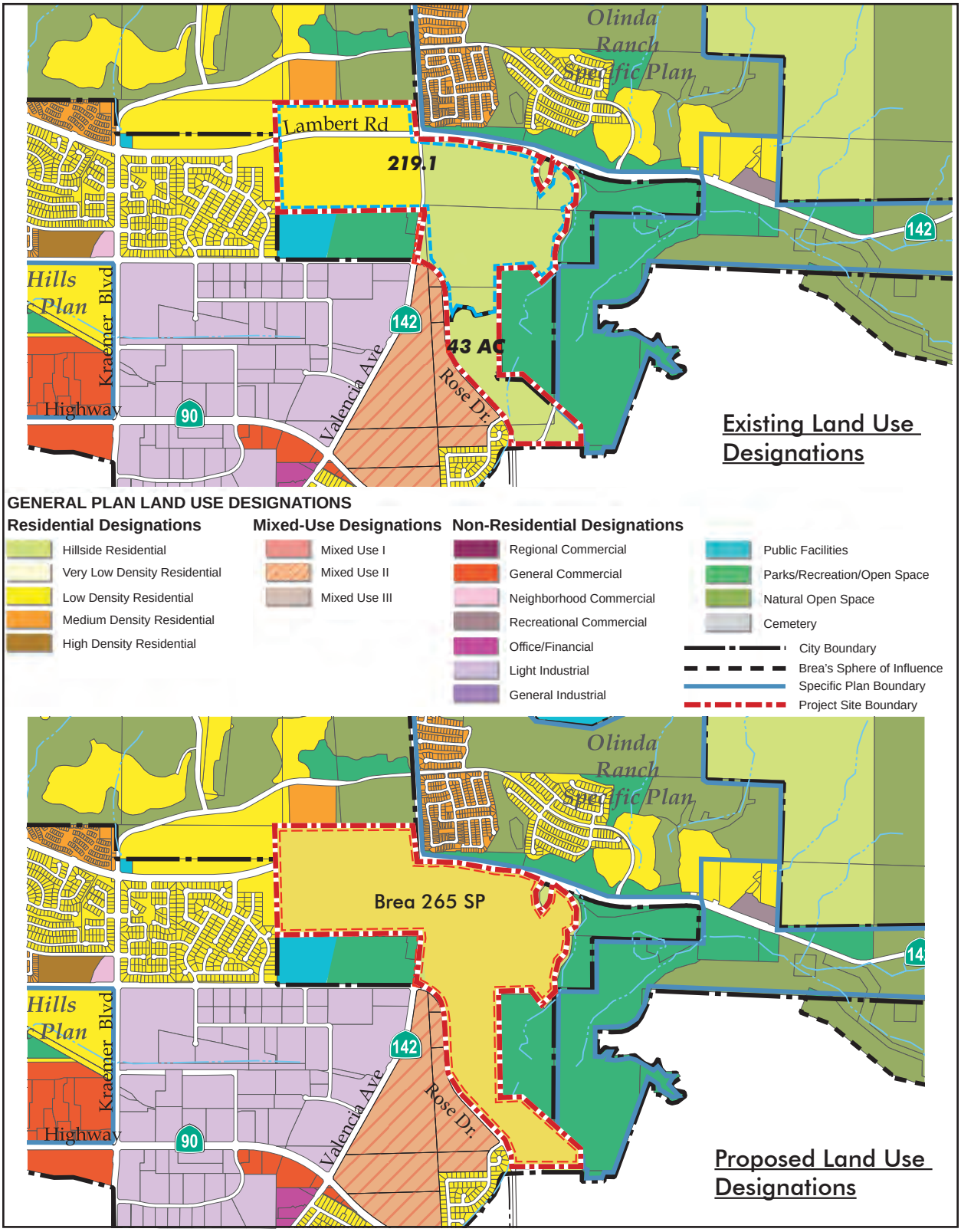
3.3.1.5 WALLS AND FENCING

The proposed project would provide comprehensive design for the community walls and fencing. Figure 3-13, *Wall and Fencing Locations*, illustrates preliminary wall and fence locations and type. Final location of wall and fences may be modified to accommodate product changes within individual neighborhoods, subject to City approval. There would be three major wall/fencing types, as described below, and additional wall/fencing types are detailed in the Specific Plan.

- **Community Perimeter Wall.** This is an approximately six-foot-tall slump-block wall with solid-top, slump-block wall cap. The walls would run along Valencia Avenue, Rose Drive, and Lambert Road/Carbon Canyon Road, in compliance with the City of Brea's interior and exterior noise standards. Final sound-wall heights will be determined according to the future noise abatement study.

Figure 3-7 - Existing and Proposed General Plan Land Use Designations

3. Project Description

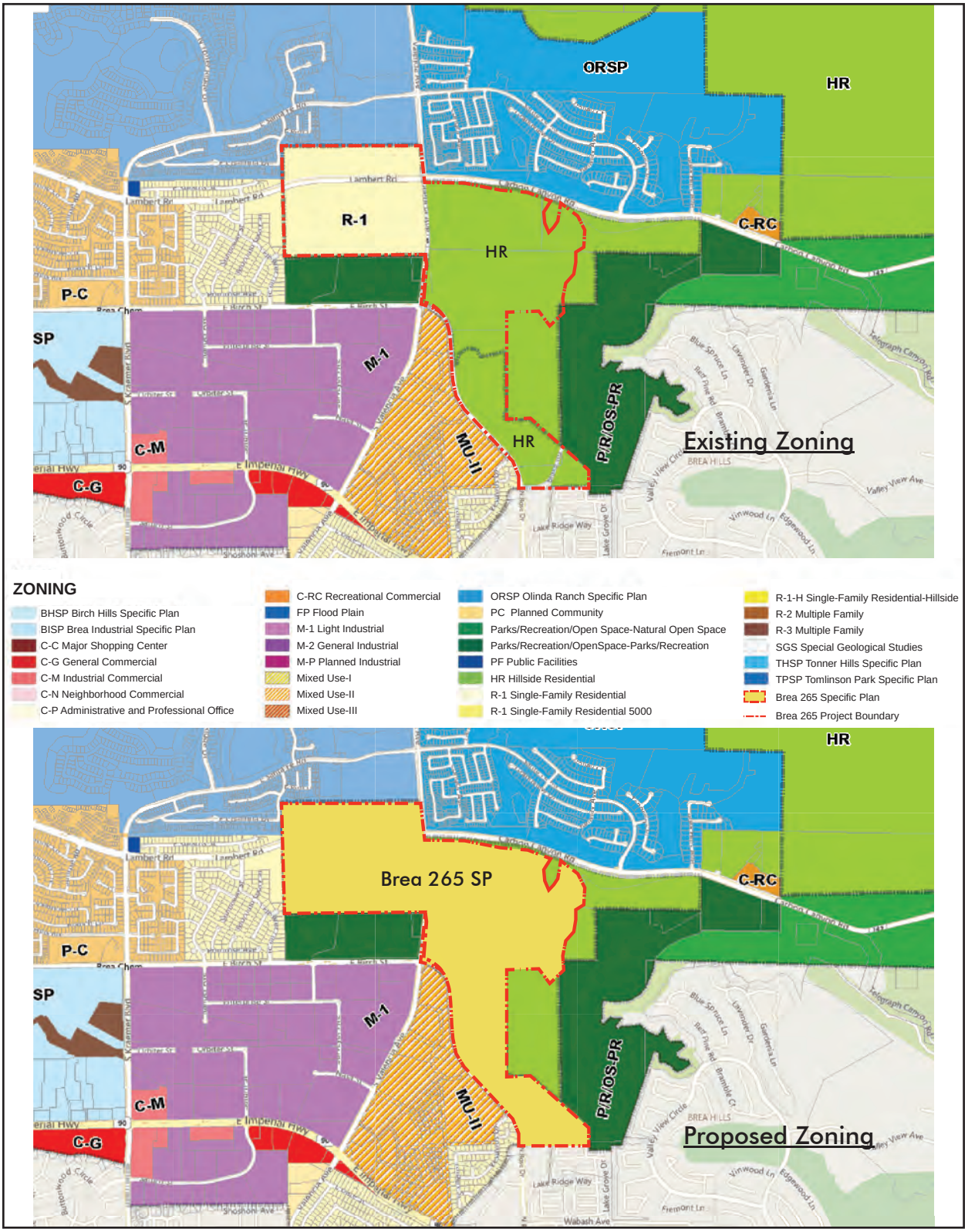


Source: KTGY Group, 2022

3. Project Description

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Figure 3-8 - Existing and Proposed Zoning Designations



Source: KTGY Group, 2022

3. Project Description

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Figure 3-9 - Master Landscape Plan

3. Project Description



1. Sports Park
2. Staging Area/Trailhead
3. Multi-Purpose Trails
4. Project Primary Entry
5. Joint Fire Police Substation Site
6. Ridgeline Trail*
7. Joint Use Water Quality Feature
8. Landscape Open Space/Fuel Mod Zone
9. Pedestrian Under Crossing
10. Potential Access to Adjacent Property

■ Candidate Art Location

*Note: No bike uses on the Ridgeline Trail. Safety barriers may be installed at the entrance of the Ridgeline Trail.

0 1,000
Scale (Feet)

Source: KYGY Group, 2022

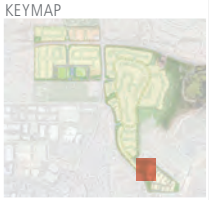
3. Project Description

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Figure 3-10 - Staging Area Park
3. Project Description



KEYMAP





1. 20’ Wide Dual Tread Multi-Purpose Trail - 10’ Asphalt + 6’ D.G. + (x2) 2’ Shoulder
2. Existing ACOE Gate
3. Open Space with Shade Trees
4. Shade Structure with Picnic Tables and Trash Receptacles
5. Gated/Secured Parking (Approx. 28 cars)
6. Restroom w/ Drinking Fountain, Parking, and Bike Racks
7. Existing Trail
8. Candidate Art Location
9. Fire Emergency Access Gate
10. Joint Use Water Quality Feature

Staging Area Park Boundary

0 170
Scale (Feet)

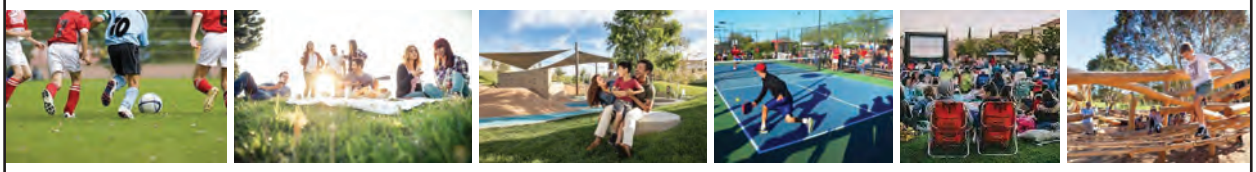
Source: KYGY Group, 2022

3. Project Description

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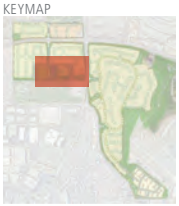
Figure 3-11 - Sports Park
3. Project Description





1. Baseball Field (285')
2. Tennis Courts (4)
3. Soccer Field (225'x330'); Football Field (180'x330')
4. Pickleball Courts (4)
5. Full Basketball Court (1)
6. Tartan Track w/ Fitness Stations, 12' Wide
7. 20' Wide Dual Tread Multi-Purpose Trail - 10' Asphalt + 6' D.G. + (x2) 2' Shoulder
8. 14' Wide Trail - AC Paving Center Striped 10' Asphalt + (x2) 2' Shoulder
9. Innovative Play Area
10. Storage (approx. 3,000 sq. ft.)
11. Shade Structure
12. Parking (approx .134 cars)
13. Concession Stand (approx 900 sq. ft.)
14. Restrooms w/ Drinking Fountain and Bike Racks
15. Water Quality Basin
16. Potential Link to Existing Park/School
17. Team Warm-up Field

KEYMAP



0 300
Scale (Feet)

Source: KYGY Group, 2022

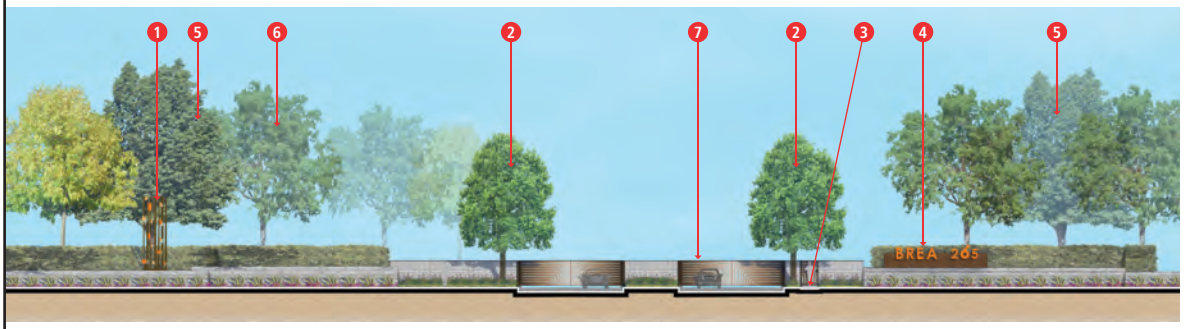
3. Project Description

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Figure 3-12 - Primary Entry Plan
3. Project Description



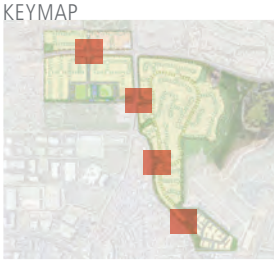
Primary Entry Drive Plan View



Primary Entry Elevation

1. Project Monument Sculpture/Art
2. Parkway
3. Community Trail/Sidewalk
4. Project Signage on Low Boardform Wall
5. Specimen Canopy Tree
6. Skyline Wind Row Tree Along Community Trail
7. Gated Community Entry

KEYMAP

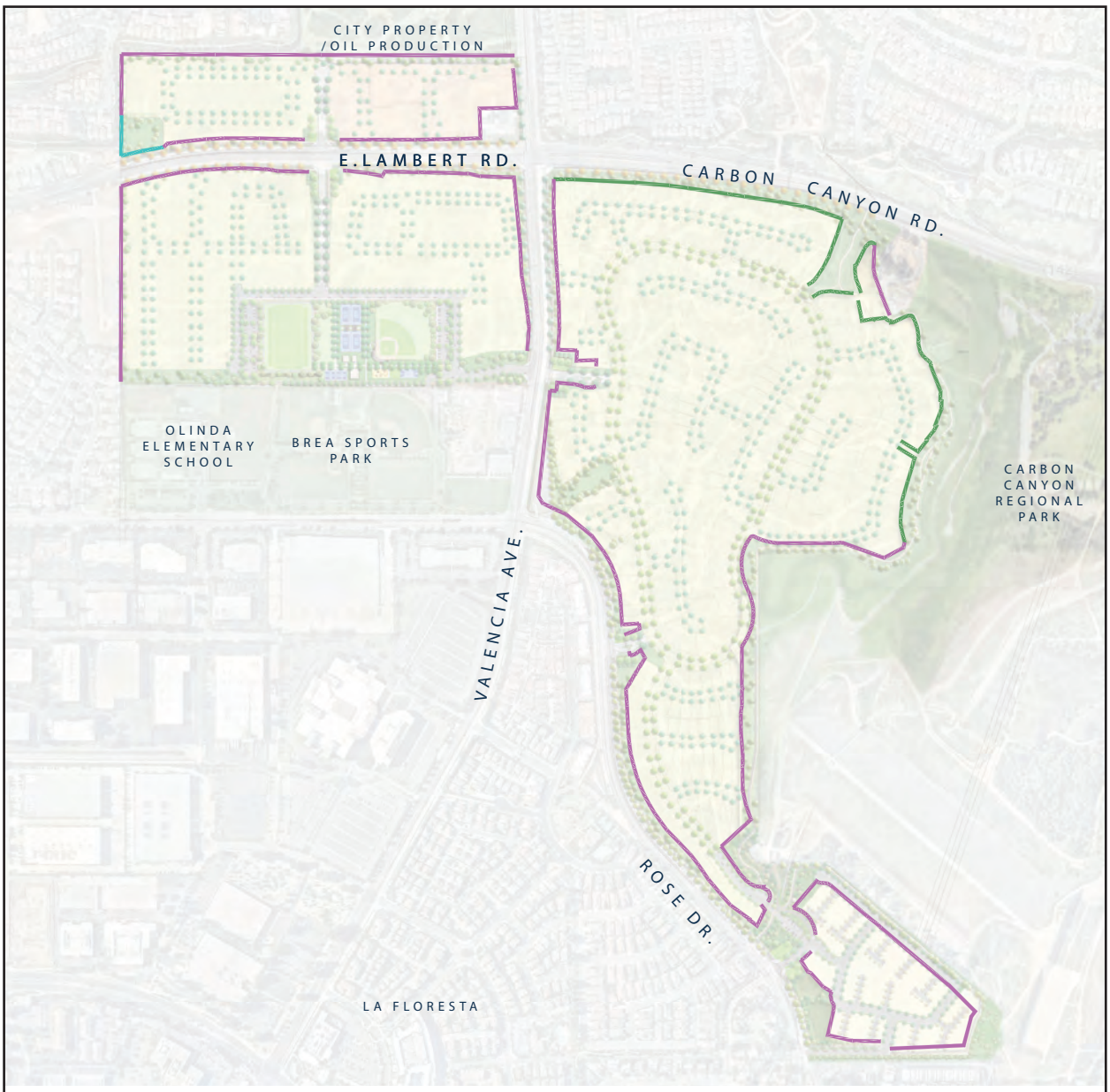


Source: KYGY Group, 2022

3. Project Description

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Figure 3-13 - Wall and Fencing Locations
3. Project Description



Source: KYGY Group, 2022

3. Project Description

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- **Community Theme Open View Glass Wall/Fence.** This is a six-foot-tall slump-block wall with glass view fence. It would be located to enhance view opportunities along residential property lines adjacent to parks or open space areas while serving the function of fuel modification for fire protection where applicable.

- **Community Theme Open View Fence.** This is a painted, six-foot-tall, tubular-steel fence that would be located to enhance view opportunities while preventing access to adjacent slopes or properties.

- **Side Yard Wall:** This is a six-foot-tall, precision-block wall that would be located at side yards to provide privacy between units.

3.3.1.6 CIRCULATION IMPROVEMENTS

Figure 3-14, *Circulation Plan*, illustrates proposed street types and classifications. As shown on Figure 3-14, two gated entries with signals and enhanced landscaping would be provided, one at the intersection of Valencia Avenue/B Street and another at the intersection of Rose Drive /P Street. Nongated entries with signals would be provided at the intersection of Lambert Road/Entry Drives (MM Drive and NN Drive), Valencia Drive/HH Drive, and Rose Drive/AA Street. One emergency-only access without signal would be provided at the intersection of Blake Road/GG Street. Two emergency accesses would be provided north of Lambert Road and Valencia Avenue. Modifications to the circulation concept may be approved by the City Engineer if determined by the City Engineer that public safety and/or efficiency could be enhanced or improved. Where acceleration/deceleration lanes are necessary, reduced landscape setbacks and bike lanes would be allowed to accommodate those street lanes, as indicated on the tentative map.

Figures 3-15 through 3-19 depict detailed street widths for each roadway. The street sections have been designed based on the City of Brea Public Works standards, with improvements/enhancements that meet the needs of Brea 265 with regard to public safety, aesthetics, functionality, and site conditions. Street layouts for internal neighborhoods would be refined as part of the subsequent tentative map review process.

Lambert Road, Major Arterial (120-foot right-of-way). Lambert Road runs in an east-west direction and is designated as a Major Arterial in the City of Brea General Plan's Master Plan of Roadways. It provides direct access to the western portion of the project site. Lambert Road currently has two travel lanes in each direction and would be improved to Major Arterial Highway Standards per City Standard 109-0, with three travel lanes in each direction. The sidewalk location would be modified to be located at the outside of the street right-of-way.

Along the project site frontage, this Major Arterial would include a 120-foot right-of-way consisting of a 14-foot-wide raised/landscaped median, three 12-foot travel lanes and an 8-foot bike lane in each direction, and a 9-foot landscaped parkway on each side of the street. Outside the street right-of-way, a 20-foot-wide, multipurpose trail would be provided on each side of the street. See Figure 3-15, *Street Sections, Carbon Canyon and Lambert Roads and Valencia Avenue*, and Figure 3-16, *Streetscape: Lambert Road and Carbon Canyon Road.*

Carbon Canyon Road, Major Arterial (120-foot right-of-way). Carbon Canyon Road (SR-142) runs in an east-west direction and is designated a Major Arterial in the City of Brea General Plan's Master Plan of

Roadways. It provides direct access to the project site from the east but there is no direct entry into the project site from this roadway. Eastbound Carbon Canyon Road includes three travel lanes, narrowing to two lanes along the project site frontage.

From Valencia Avenue for approximately 870 linear feet to the east, Carbon Canyon Road would include a 120-foot to 124-foot right-of-way consisting of three travel lanes in each direction, a 4-foot painted median, two 12-foot turn lanes on the north side of the street, a 16-foot merge lane, and a 20-foot multipurpose trail on the south side of the street. From approximately 870 linear feet east of Valencia Avenue to the project site boundary, Carbon Canyon Road would include a 120-foot right-of-way consisting of two travel lanes in each direction, a 15-foot painted median, a 10-foot striped area and a 9-foot sidewalk on the north side of the street, and a 6-foot bike lane and a proposed 14-foot multipurpose trail on the south side of the street. Collectively, the trail and landscaped slope would form an 80-foot-wide minimum landscape setback from the ultimate curb face to the residential property line on the south side of Carbon Canyon Road. See Figures 3-15 and 3-16.

Valencia Avenue, Primary Arterial (100-foot right-of-way). Valencia Avenue (SR-142) runs in a north-south direction and bisects the project site into eastern and western portions. This street is designated a Primary Arterial in the General Plan's Master Plan of Roadways and provides direct access to the eastern project site. Valencia Avenue is an existing state highway improved with two lanes in each direction, per Primary Arterial Highway Standards. No additional travel lanes are proposed on Valencia Avenue.

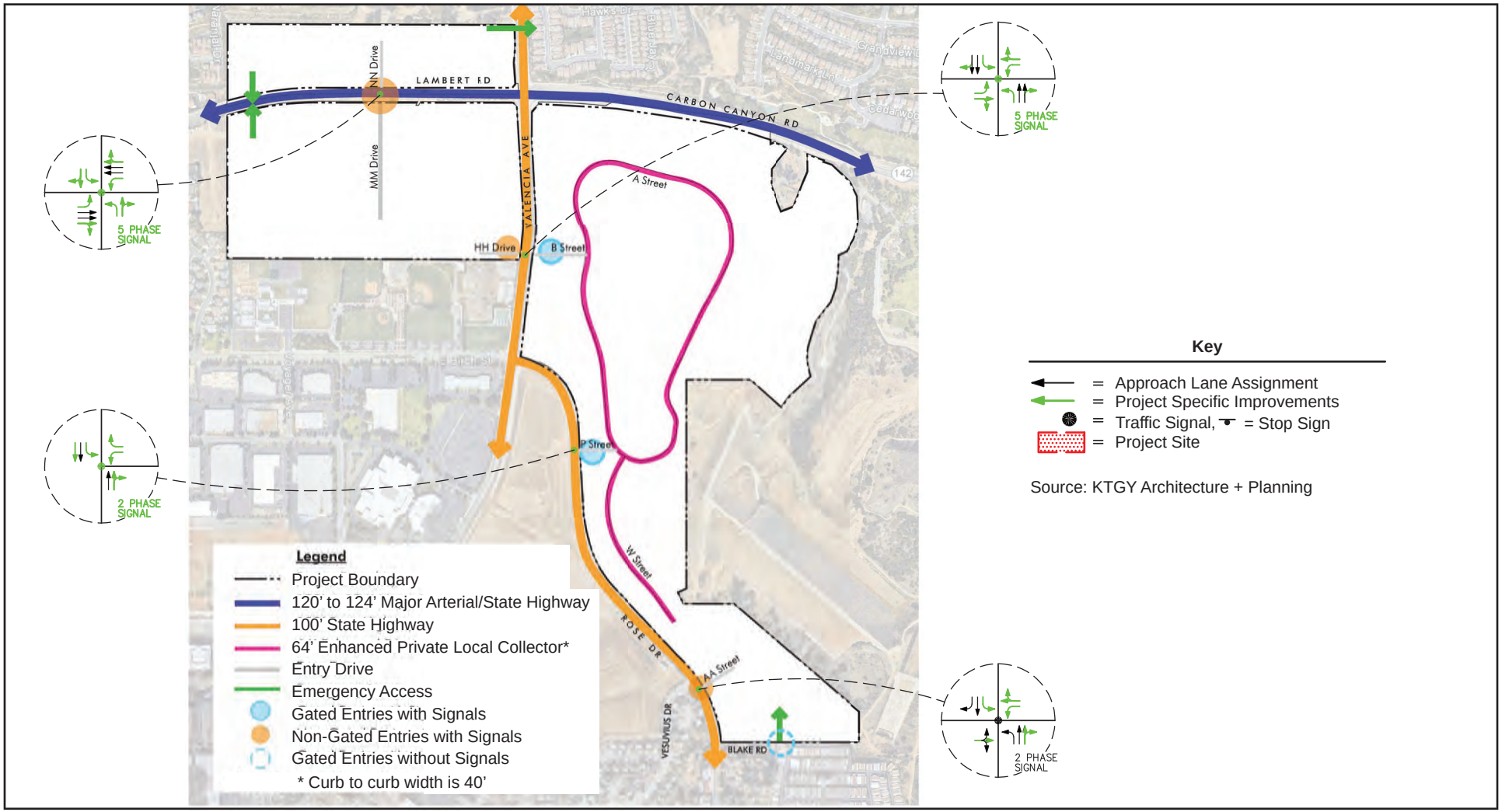
Along the project site frontage, Valencia Avenue would include a 100-foot right-of-way consisting of a 3-foot- to 13-foot-wide landscaped median; two 14-foot travel lanes and an 8-foot bike lane in one direction; one 14-foot travel lane, one 12-foot travel lane, and an 8-foot bike lane in another direction; and an 8-foot landscaped parkway on both sides of the street. Outside the street right-of-way, a 20-foot multipurpose trail would be provided on the east side of Valencia Avenue. Collectively, the landscaped parkway, multipurpose trail, and landscaped slope would form a 60-foot-wide minimum landscape setback from the existing face of the street curb to the adjacent residential property line on east side of Valencia Avenue. See Figure 3-15 and Figure 3-17, *Streetscape: Valencia Avenue and Rose Drive*.

Rose Drive, Primary Arterial (50-foot right-of-way on the east side). Rose Drive runs in a north-south direction and is designated a Primary Arterial in the General Plan's Master Plan of Roadways. It provides direct access to the project site from the south. Currently, Rose Drive includes two travel lanes in each direction for the majority of the project site frontage. Rose Drive would be improved to Primary Highway Standards on the east side of the street, per City Standard 109-0. Due to width limitations on the west side of Rose Drive, modifications to the center median standard may be needed to fit an additional southbound through lane.

Rose Drive would include a 50-foot right-of-way on the east side (measured from the street centerline) that consists of a median, two travel lanes, a 5-foot landscaped parkway, and a portion of a 20-foot, dual-tread, multipurpose trail. The area outside the street right-of-way would include a portion of a 20-foot, dual-tread, multipurpose trail and landscaped slope of varying widths on the east side. Collectively, the landscaped parkway, the trail, and landscaped slope would form a 55-foot-wide minimum landscape setback from the face of the street curb to the residential property line on the east side of Rose Drive. See Figure 3-18, *Street Section: Rose Drive, Blake Road, and Enhanced Interior Local Collectors*.

Figure 3-14 - Circulation Plan

3. Project Description

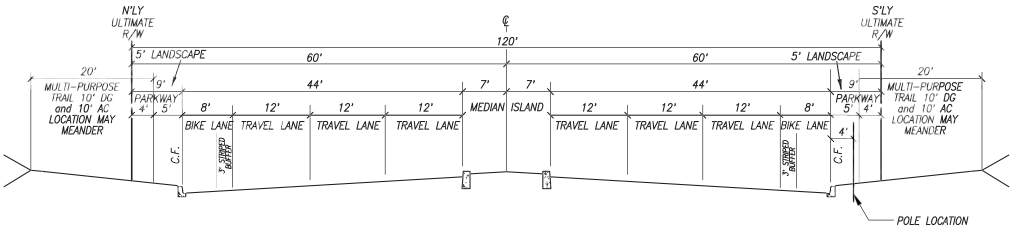


Source: Linscott Law & Greenspan Engineers, 2022

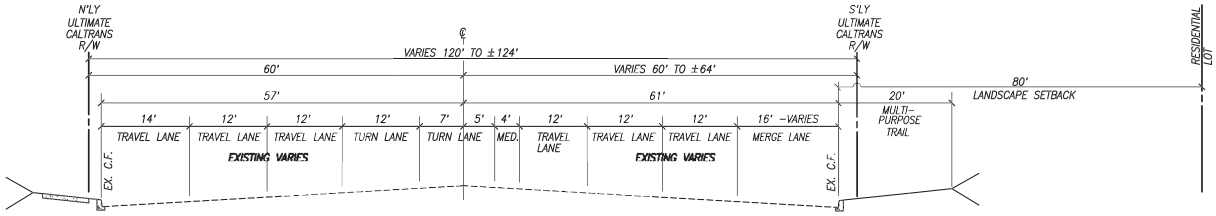
3. Project Description

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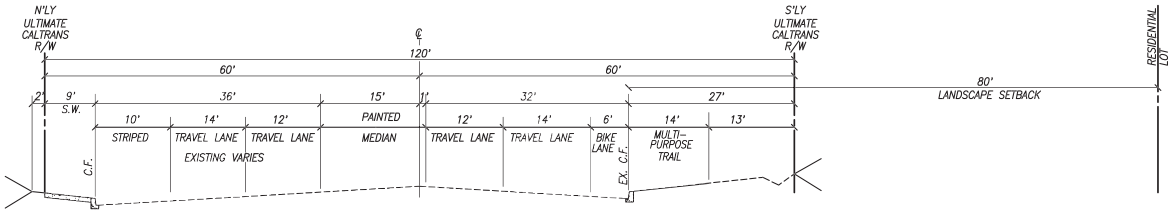
Figure 3-15 - Street Section: Carbon Canyon and Lambert Roads and Valencia Avenue



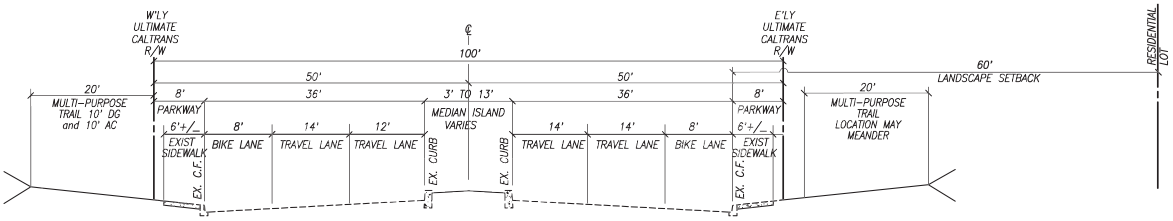
LAMBERT ROAD



CARBON CANYON ROAD (ST. RTE 142)
FROM VALENCIA AVE TO 870 LF EASTERLY



CARBON CANYON ROAD (ST. RTE 142)
FROM 870 LF EASTERLY OF VALENCIA TO EASTERLY BREA 265 BOUNDARY



VALENCIA AVENUE (ST. RTE 142)
SOUTHERLY OF LAMBERT AND CARBON CANYON

NOT TO SCALE

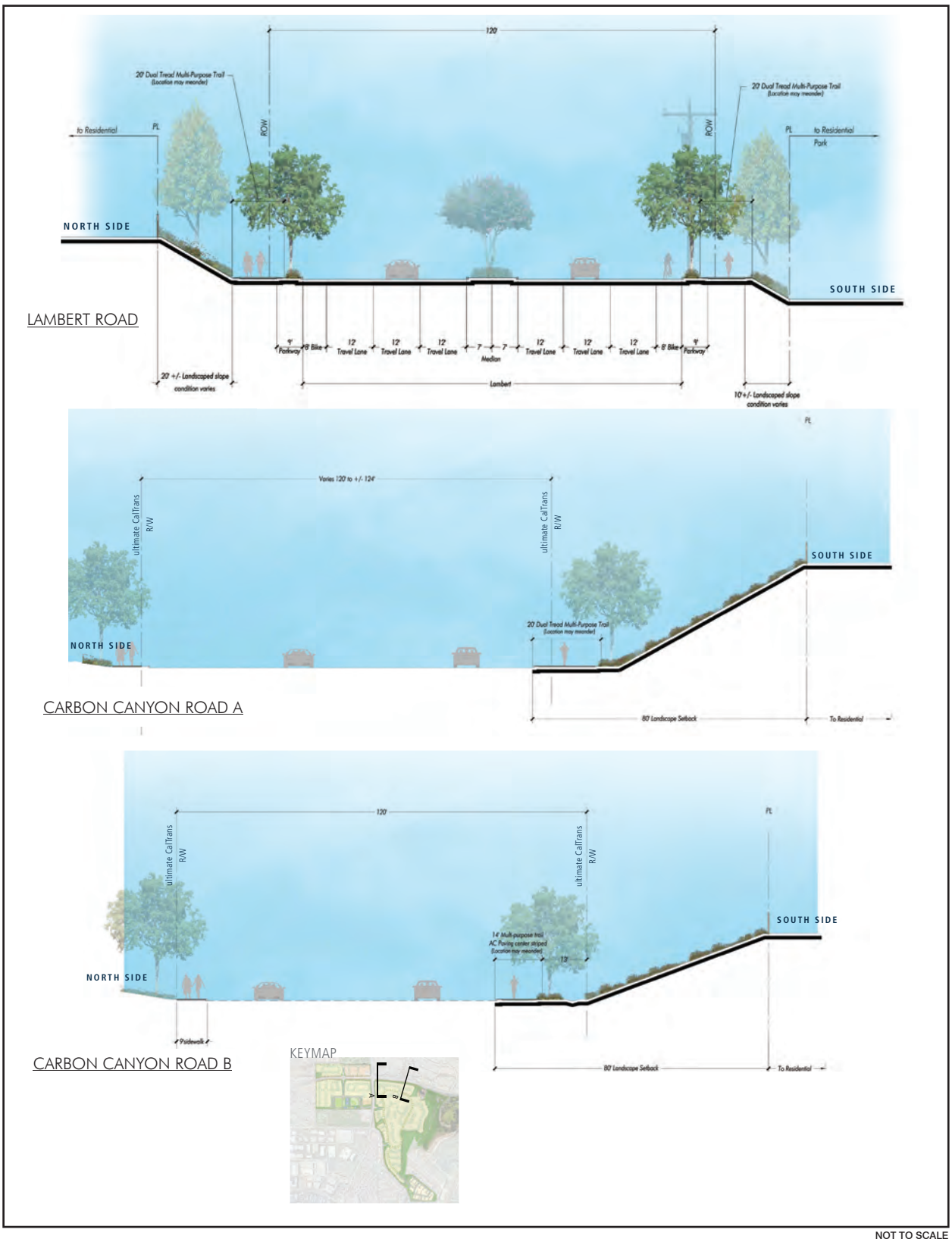
Source: KYGY Group, 2022

3. Project Description

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Figure 3-16 - Streetscape: Lambert Road and Carbon Canyon Road

3. Project Description



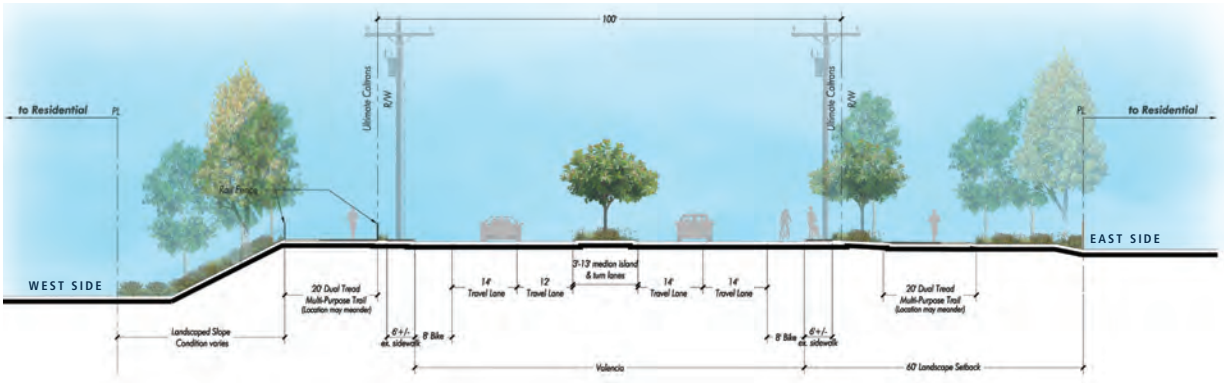
NOT TO SCALE

Source: KYGY Group, 2022

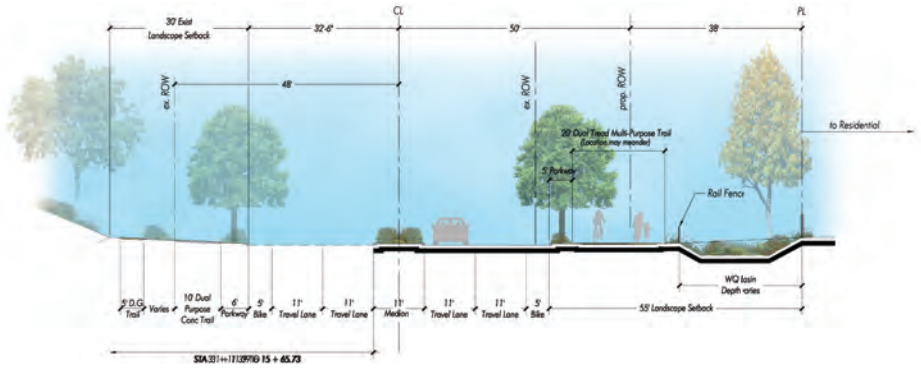
3. Project Description

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Figure 3-17 - Streetscape: Valencia Avenue and Rose Drive



VALENCIA AVENUE



ROSE DRIVE

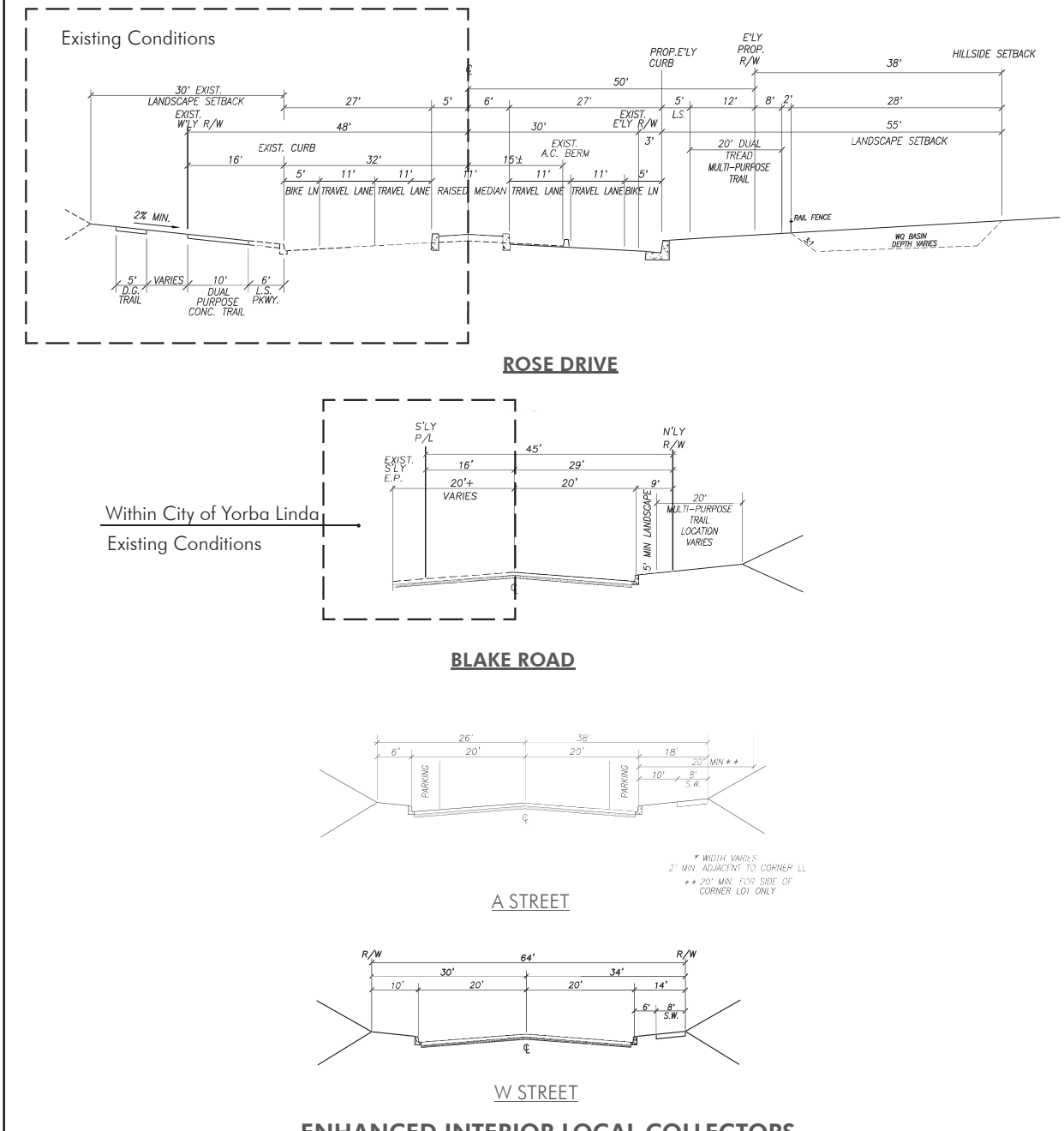
NOT TO SCALE

Source: KYGY Group, 2022

3. Project Description

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Figure 3-18 - Street Section: Rose Drive, Blake Road, and Enhanced Interior Local Collectors



NOT TO SCALE

Source: KYGY Group, 2022

3. Project Description

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Blake Road (29-foot right-of-way on the north side). Blake Road would include a 29-foot right-of-way on the north side (measured from the street centerline), which consists of a 20-foot travel lane and a 4-foot sidewalk. The area outside the street right-of-way would include a 20-foot, dual-tread, multipurpose trail on the north side. See Figure 3-18.

Enhanced Interior Local Collector: A and W Streets (64-foot right-of-way with 40-foot curb-to-curb width). The interior local collector traverses the eastern portion of the project site. 'A' Street is a loop street with a 64-foot right-of-way that consists of a 20-foot travel lane in each direction (total curb-to-curb width of 40-foot), a 6-foot landscaped parkway adjacent to the curbs on one side, and a 10-foot landscaped parkway and an 8-foot sidewalk on the other side. Street parking is allowed on the interior loop streets subject to the City's parking limits. Outside the street right-of-way, landscaped slopes of varying widths would be provided on one or both sides, depending on the location. Collectively, the landscaped parkway, sidewalk/multipurpose trail, and landscaped slopes would form a 20-foot-wide minimum landscape setback from the face of the street curb to the residential property line on at least one side of the interior loop street. 'W' Street would provide a 64-foot right-of-way that consists of a 20-foot travel lane in each direction (total curb-to-curb width of 40 feet), a 10-foot landscaped parkway, and an 8-foot sidewalk on one side. See Figure 3-18.

Enhanced Interior Local Streets (58-foot right-of-way with 40-foot curb-to-curb width). Interior local streets are pedestrian oriented, incorporate traffic-calming measures, and support both front-loaded and rear-loaded homes. They provide access to individual properties and driveways within the residential neighborhoods and connect to the interior loop street and arterial streets. See Figure 3-19, *Street Section - Enhanced Interior Local Streets, Entry Drives, and Alley.*

The interior local streets are Enhanced Local Streets with a 58-foot right-of-way that consists of a 20-foot travel lane in each direction (total curb-to-curb width of 40 feet), a 5-foot-wide curb-adjacent landscaped parkway, and a 4-foot-wide sidewalk on both sides. In some instances where warranted, interior local street parkways may be constructed wider than 6 feet to accommodate bio-swales.

MM Drive has a 58-foot right-of-way that consists of a 20-foot travel lane in each direction (total curb-to-curb width of 40 feet); a 5-foot-wide curb-adjacent landscaped parkway and a 4-foot-wide sidewalk on one side; and a 5-foot-wide curb-adjacent landscaped parkway and a 14-foot-wide multipurpose trail on the other side.

LL Drive has a 58-foot right-of-way that consists of a 20-foot travel lane in each direction (total curb-to-curb width of 40-foot); a 5-foot-wide curb-adjacent landscaped parkway and a 4-foot-wide sidewalk on one side; and a 14-foot-wide, multipurpose trail on the other side. Street parking is allowed on the interior local streets subject to City's parking limits.

Interior Alleys. Private interior alleys provide access to garages that are located away from interior local streets. Interior alleys will be 24 feet wide between curb lines with no parking, and garage doors will be set back a minimum of 3 feet from the edge of the curb line. See Figure 3-19.

Entry Drives at Lambert Road, Valencia Avenue, Rose Drive, and Blake Road. Community entries are located on Lambert Road, Valencia Avenue, Rose Drive, and Blake Road, as indicated on Figure 3-14. There would be no entry into the community on Carbon Canyon Road. The B Street entry drive from Valencia Avenue

has a 98-foot right-of-way that consists of 48-foot roadway pavement, a 5-foot sidewalk on one side of the entry drive, and an 8-foot trail on the other side. HH Entry Drive from the west side of Valencia Avenue would have a 66-foot right-of-way that consists of 48-foot roadway pavement, 4-foot sidewalk, and 5-foot landscaped parkway on both directions. AA Street entry drive at Vesuvius Drive across Rose Drive would have an 80-foot right-of-way that consists of 40-foot roadway pavement, an 8-foot meandering trail on one side of the entry drive, and a 4-foot meandering sidewalk on the other side. P Street entry drive from Rose Drive would have a 108-foot to 124-foot right-of-way that consists of 37-foot to 70-foot roadway pavement, an 8-foot meandering trail on one side of the entry drive, and 5-foot sidewalk on the other side. NN Drive at Lambert Road and GG Street at Blake Road would have the same cross-section as the interior local streets, with a 4-foot sidewalk and 5-foot landscaped parkway on each side of the street. See Figure 3-19. Each entry drive would incorporate special landscaped entry treatments, as shown on Figure 3-12.

3.3.1.7 NONVEHICULAR CIRCULATION

Bikeways

The proposed bikeway system is designed to facilitate continuous bicycle access throughout the project site and provide linkage to the regional and local bikeway networks, consistent with the City's General Plan Bikeway Plan. Bike paths are integrated into the overall Brea 265 trail system as depicted on Figure 3-6, *Nonvehicular Circulation Plan*.

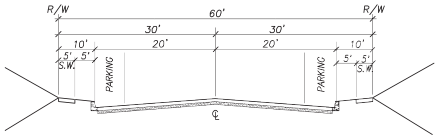
Bike lanes would be provided on both sides of Lambert Road and Valencia Avenue and on the south side of Carbon Canyon Road. The bikeways would be designed to the City's bikeway standards and connect to the existing and planned bikeways in the vicinity of the project site. Within the project site, bicyclists would share the local streets with vehicles due to the low traffic volumes and limited speeds. Due to topographic, safety, and grading considerations, bike use would be prohibited and/or restricted on the Ridgeline Trail along the eastern boundary of the project site.

Pedestrian Circulation

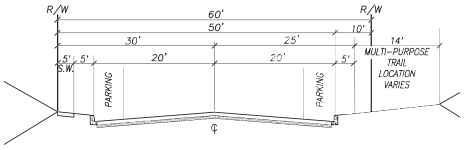
The proposed project has been designed to promote a pedestrian-oriented community by integrating the Brea 265 trail system with the recreational experience in the Specific Plan area and providing connections to three major city and regional trail systems, including neighboring Carbon Canyon Regional Park Trail, Olinda Oil Museum and Trail, and the Tracks at Brea Trail. The trail system, pedestrian pathways, and sidewalks would create a comprehensive recreational network. Figure 3-6 depicts the comprehensive trail system planned throughout Brea 265. Figures 3-16 and 3-17 provide detailed views of vehicular travel lanes, bike lanes, trails, and sidewalks on Carbon Canyon Road, Lambert Road, Valencia Avenue, and Rose Drive.

One trailhead and one staging area are planned in the southeastern portion of the project site to provide trail linkage to Carbon Canyon Regional Park. Perimeter trails are open to the public, including those in the gated neighborhoods. One key feature of the trail system is the underground pedestrian crossing connecting the neighborhoods north and south of Lambert Road.

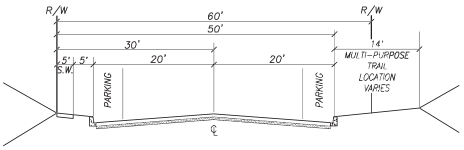
Figure 3-19 - Street Sections - Enhanced Interior Local Streets, Entry Drives, and Alley
3. Project Description



STREETS C THROUGH O, Q THROUGH V, X THROUGH Z, DD THROGH GG, II, JJ, KK AND NN

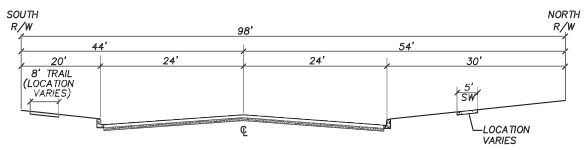


MM & CC STREET

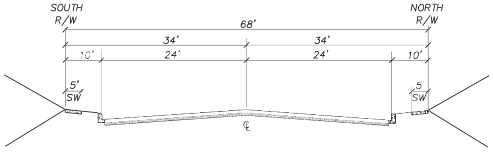


LL STREET

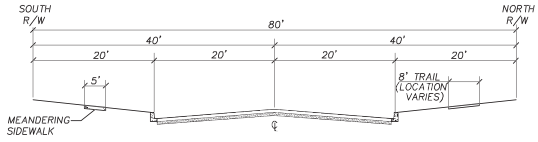
ENHANCED INTERIOR LOCAL STREETS



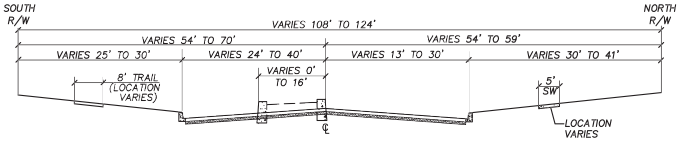
B STREET ENTRY DRIVE AT VALENCIA



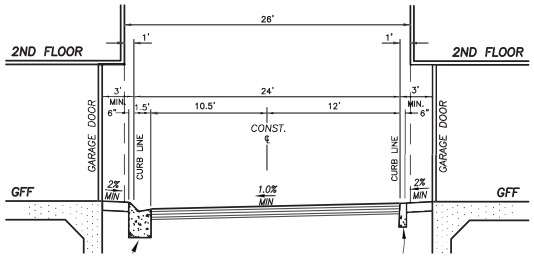
HH STREET ENTRY DRIVE AT VALENCIA



AA STREET ENTRY DRIVE
AT VESUVIUS DR & ROSE DR



P STREET ENTRY DRIVE AT VALENCIA/
N'LY ENTRY DRIVE AT ROSE



TYP. ALLEY SECTION

NOT TO SCALE

Source: KYGY Group, 2022

3. Project Description

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Sidewalks: The proposed project would provide visually appealing, landscaped parkways with street trees and adequately sized sidewalks, creating a pedestrian-friendly environment. The interior loop street, local streets, and entry drives would have parkway-separated sidewalks to provide continuous pedestrian access to parks, recreation areas, and the trail system.

Trails: The proposed project would provide a trail system that provides connectivity between the residential neighborhoods, open space, parks, and community amenities. These trails are also designed to allow for direct connections or through neighboring communities to existing trails outside of the project site, including the Tracks at Brea Trail, El Cajon Trail, Chino Hills Trail, and Carbon Canyon Regional Park Trail, consistent with the intent of the Brea Trails Plan. These trail connections would provide trail users with ample route alternatives and trail loops, and also provide views of natural and recreational open space along the adjoining eastern slope. Approximately five miles of multipurpose trails are planned for bicycling and pedestrian connectivity. Trails within Brea 265 would be constructed by the master developer and maintained by the homeowners association (HOA), except for trails within the Sports Park and Staging Area Park.

3.3.1.8 TRANSIT

Orange County Transit Authority (OCTA) provides public bus service to the City of Brea. Currently, there is no OCTA bus service to the Specific Plan area. An established network of bus routes provides access to employment centers, shopping, and recreational areas in the City. OCTA continually modifies the bus routes in order to meet the needs of its riders. As Brea 265 is developed, routes may be added. If a route is added in the future, the design of bus shelters, if any, would be reviewed for compatibility with the community aesthetics and approved by the City and OCTA.

3.3.1.9 INFRASTRUCTURE IMPROVEMENT

The proposed project would provide water, sewer, drainage, gas, electricity, and telecommunication infrastructure within the project site to serve the project.

Water System. The City would provide water services to the project site. Connections would be made to the existing 790 Zone 12-inch water line in Lambert Road and 24-inch water line in Valencia Avenue with reduced pressure for the project site west of Valencia Avenue. The northern portion of project site east of Valencia Avenue would also connect to the existing 790 Zone 24-inch water line in Valencia Avenue. For the southern portion of the project site east of Valencia Avenue, looped connections to the 605 Zone 12-inch water line in Rose Avenue would be made. The proposed water system is shown on Figure 3-20, *Conceptual Water System*.

Sewer System. All sanitary sewer infrastructure would be publicly maintained by the City. The project site west of Valencia Avenue falls within Region 8 of the City of Brea Sewer Master Plan, and a new sewer line would be constructed under Lambert Road to convey flows from the project site north of Lambert Road to the project site south of Lambert Road. Sewer from the south would connect to the existing 8-inch sewer stub at the north end of the Brea Sports Park. Sewer in the north would be connected to the existing Valencia Avenue sewer stub to the north of Lambert Road. The project site east of Valencia Avenue falls within Region 9 of the City of Brea Sewer Master Plan. Sewer within the eastern portion would connect to the existing 33-inch Orange County Sanitation District Carbon Canyon Dam interceptor sewer. See Figure 3-21, *Conceptual Sewer System*.

Drainage System. Water quality and detention basins would be provided to treat the first flush and detain excess peak storm runoff. Where practical, water quality treatment areas have been designed to be utilized as open space for passive recreation. See Figure 3-22, *Conceptual Drainage System*.

Natural Gas System. The Southern California Gas Company (SoCalGas) would provide natural gas services to the project site. All new gas lines would be placed underground. An existing 30-inch high-pressure steel gas main traverses the southern portion of the project site east of Valencia Avenue. A portion of this gas main may be relocated within Rose Drive through the landscape setback areas and between the proposed lots, per SoCalGas standards.

Electricity. Southern California Edison (SCE) would provide electrical services to the proposed project. SCE would install necessary distribution facilities to serve the proposed project, and all new electricity lines would be placed underground.

Petroleum Pipeline. The proposed project would remove 5,700 feet of the existing 6-inch, steel, petroleum pipeline in an existing 6-foot-wide easement that traverses the east side of the project site to west along Valencia Avenue and Rose Drive.

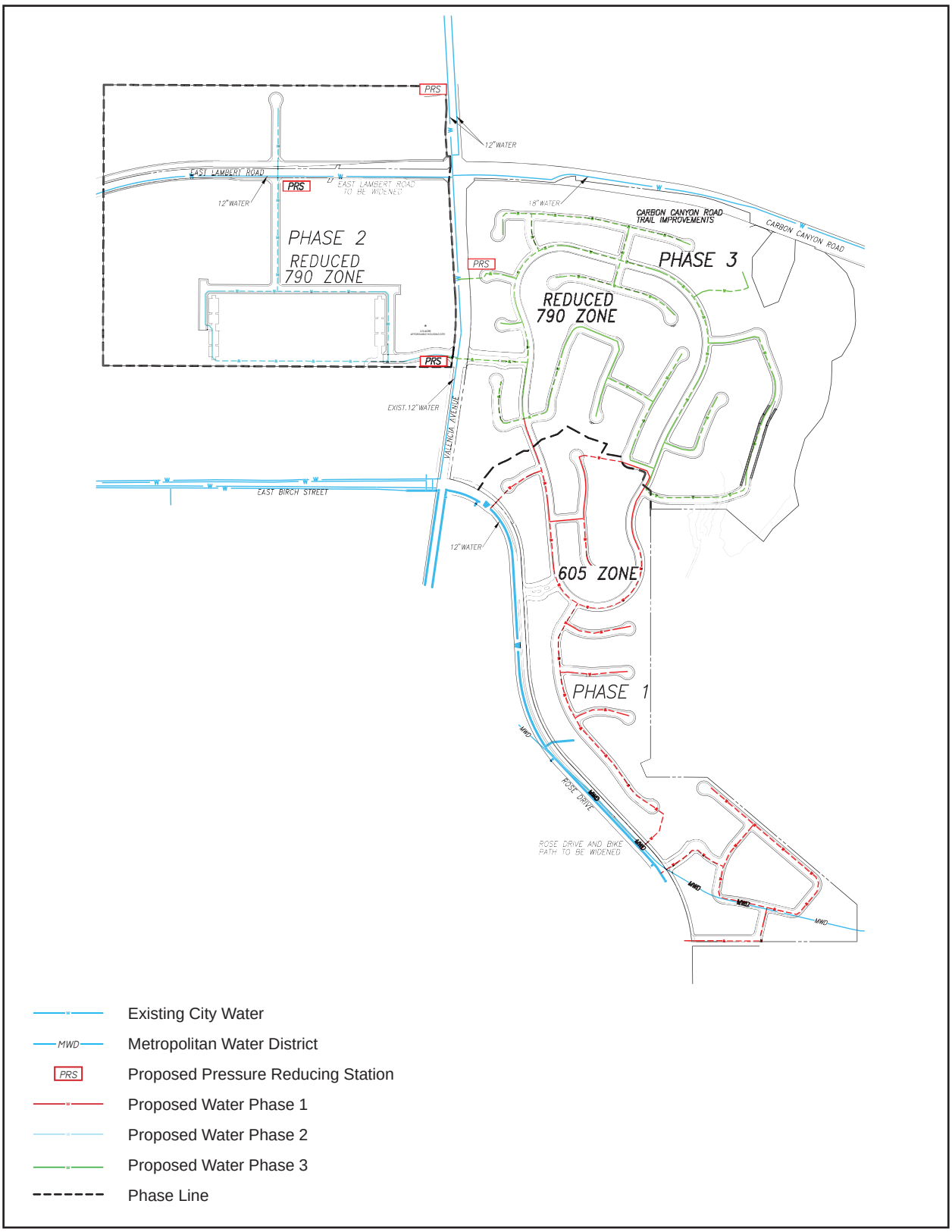
3.3.1.10 CONSTRUCTION STAGING AREA

Different construction staging areas would be set up for each of the planning areas within the project site. A site-specific construction worksite staging and traffic control plan will be prepared and submitted to the City of Brea for review and approval prior to the start of any construction work. This plan will include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons, lights, warning beacons, temporary traffic signals, warning signs). The proposed project would be required to comply with the City-approved plan measures.

3.3.1.11 ANNEXATION

Subsequent to the approval of Brea 265 Specific Plan and the Development Agreement, the 219.1-acre portion of the SP area currently within the City's SOI would be annexed into the City of Brea, consistent with the 2005 pre-annexation agreement. See Figure 3-23, *Annexation Areas*. The request would be processed through the Orange County Local Agency Formation Commission (OC LAFCO). A pre-annexation agreement for the property was prepared and approved by OC LAFCO in 2005 between the City of Brea, County of Orange, and Aera Energy. The agreement anticipated that a comprehensive planning process leading to annexation into the City of Brea would be undertaken for the property. The entitlements approved by the City Council for the 219.1-acre SOI area would become effective upon completion of the annexation process by OC LAFCO.

Figure 3-20 - Conceptual Water System
3. Project Description



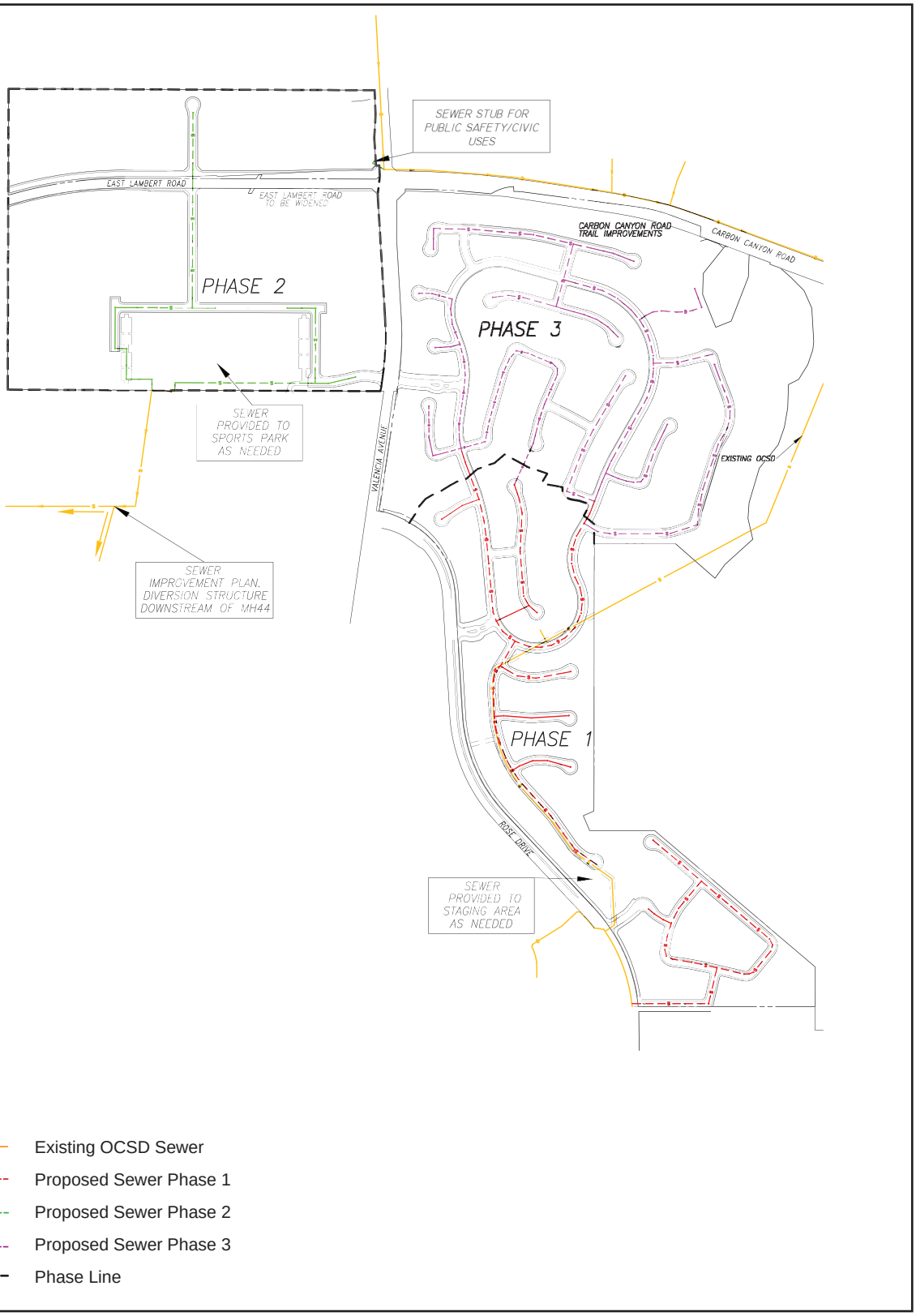
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Source: KYGY Group, 2022

3. Project Description

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Figure 3-21 - Conceptual Sewer System
3. Project Description

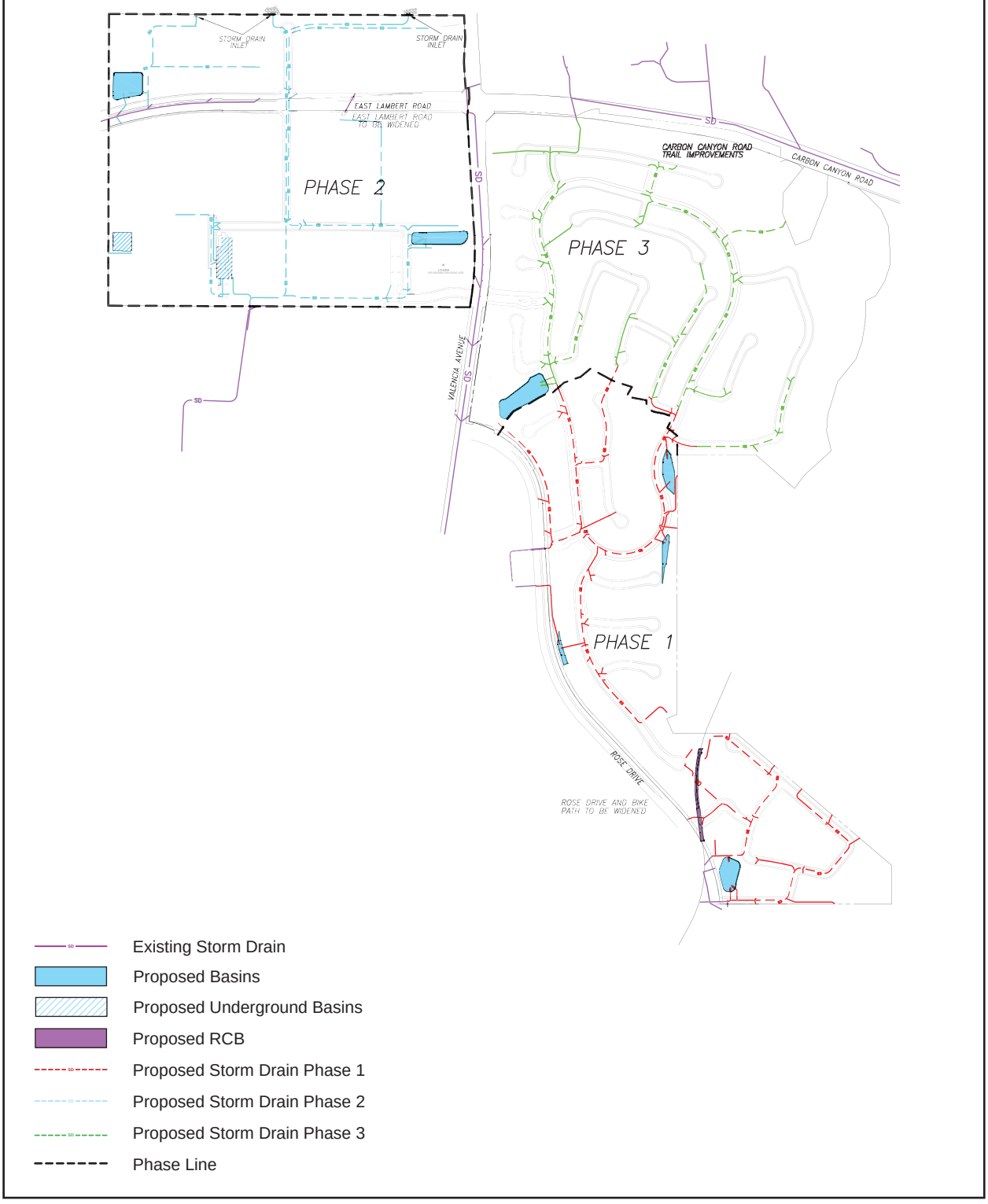


Source: KYGY Group, 2022

3. Project Description

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Figure 3-22 - Conceptual Drainage System
3. Project Description



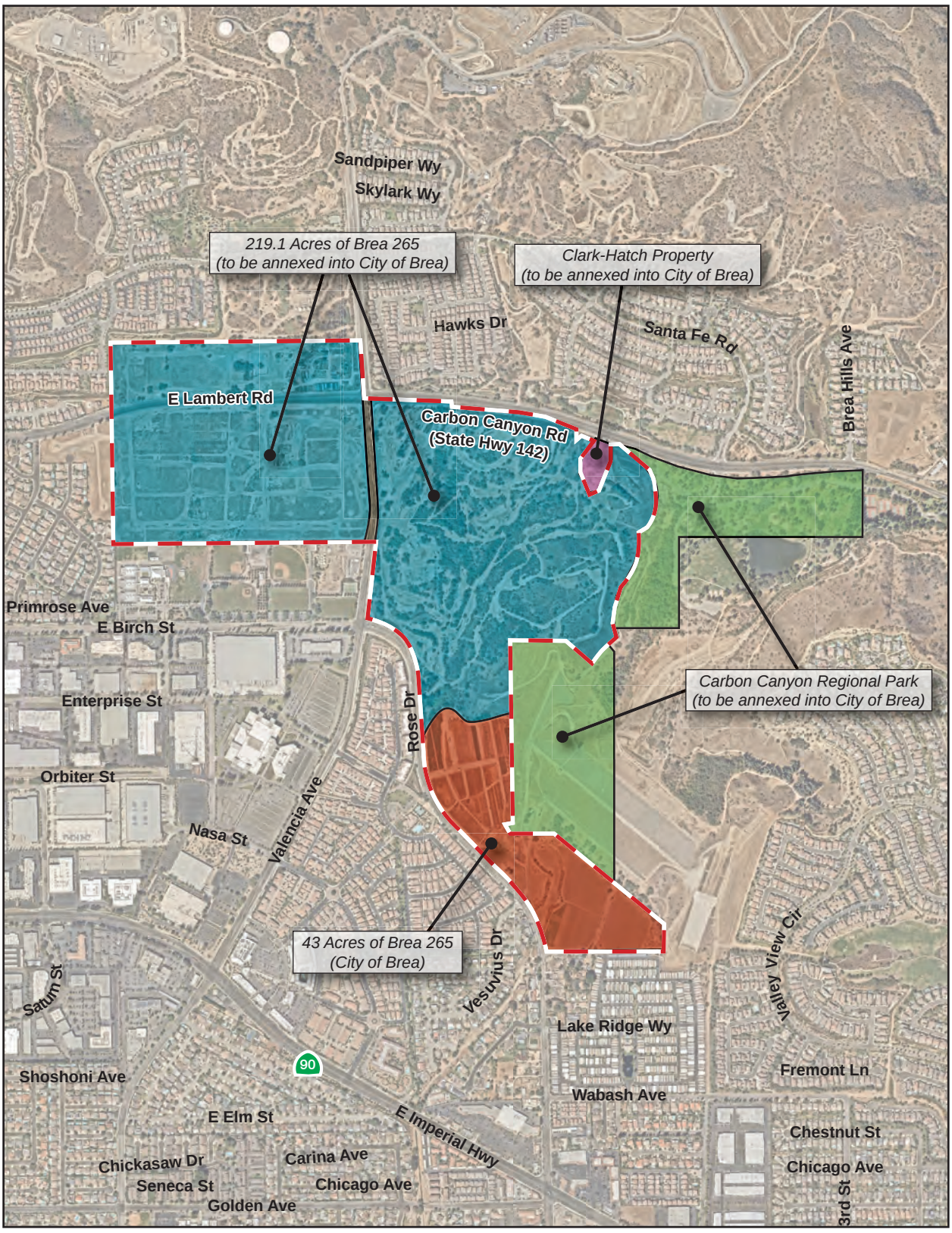
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Source: KYGY Group, 2022

3. Project Description

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Figure 3-23 - Annexation Areas
3. Project Description



Project Site Boundary

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Scale (Feet)

Source: Nearmap, 2021

3. Project Description

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3.3.2 Discretionary Actions and Approvals

Approval of the proposed project includes certification of this environmental impact report, including the adoption of findings of fact, statement of overriding considerations, and mitigation monitoring program; approval of a general plan amendment, a specific plan/rezoning, a tentative tract map, a development agreement; and the annexation. Together, the proposed approvals and their implementation constitute the "project" for the purposes of CEQA. Below is a description of the proposed approvals.

- **Certification of Environmental Impact Report (EIR).** The Brea 265 Specific Plan is a discretionary project and is subject to CEQA requirements. The EIR for Brea 265 has been prepared in accordance with CEQA and the CEQA Guidelines. Prior to the approval of the Brea 265 Specific Plan, the EIR must be certified by the City Council in conjunction with approvals of any project related entitlements.

- **General Plan Amendment.** The City of Brea General Plan Land Use Map would be amended from the current "Hillside Residential" and "Low Density Residential." designations to "Brea Specific Plan."

- **Specific Plan/Rezoning.** Approval of the Specific Plan is required for changing the zoning designations of the project site from "Hillside Residential (HR)" and "Single Family Residential (R-1)" to "Brea 265 Specific Plan" and for rezoning the 219.1-acre portion of the Specific Plan area currently in the County and in Brea's SOI as well as the 43-acre portion of the site that is in Brea.

- **Tentative Tract Map.** Approval of a tentative tract map for the subdivision of the 262-acre site for residential development, including park, recreation, and open space uses.

- **Development Agreement.** Approve a development agreement between the City of Brea and the project applicant (Aera Energy) in conjunction with the Brea 265 Specific Plan/rezoning requests. It establishes vesting of development rights and entitlements and identifies project improvements, timing of improvements, and the responsibilities and rights of both the City and the project applicant.

- **Annexation.** After the above discretionary actions have received approvals from the City Council, the 219.1-acre portion of the Brea 265 Site currently in Brea's SOI will be annexed into the city (see Figure 3-23, *Annexation Areas*), consistent with the 2005 pre-annexation agreement. The request will be processed through the OC LAFCO. A pre-annexation agreement for the property was prepared and approved by OC LAFCO in 2005 between the City of Brea, County of Orange, and Aera Energy. The agreement anticipates annexation of the county territory sometime prior to September 29, 2022, and that a comprehensive planning process would be undertaken for the property to facilitate the annexation into Brea. The land use entitlements listed above will be acted on by the City Council in conjunction with the initiation of the annexation request to annex the unincorporated portion of the project site into the city. At the time of approval by the City Council, the land use entitlements for the 43-acre portion of the project site in the city limits will become effective immediately or as provided for by state law. The above entitlements for the unincorporated 219.1-acre portion of the project site approved by the City Council will take effect upon completion of the annexation process. Additionally, at the time of annexation of the 219.1-acre portion

of the project site, the unincorporated portion of Carbon Canyon Regional Park and the Clark-Hatch property will also be annexed.

3.3.3 Project Phasing

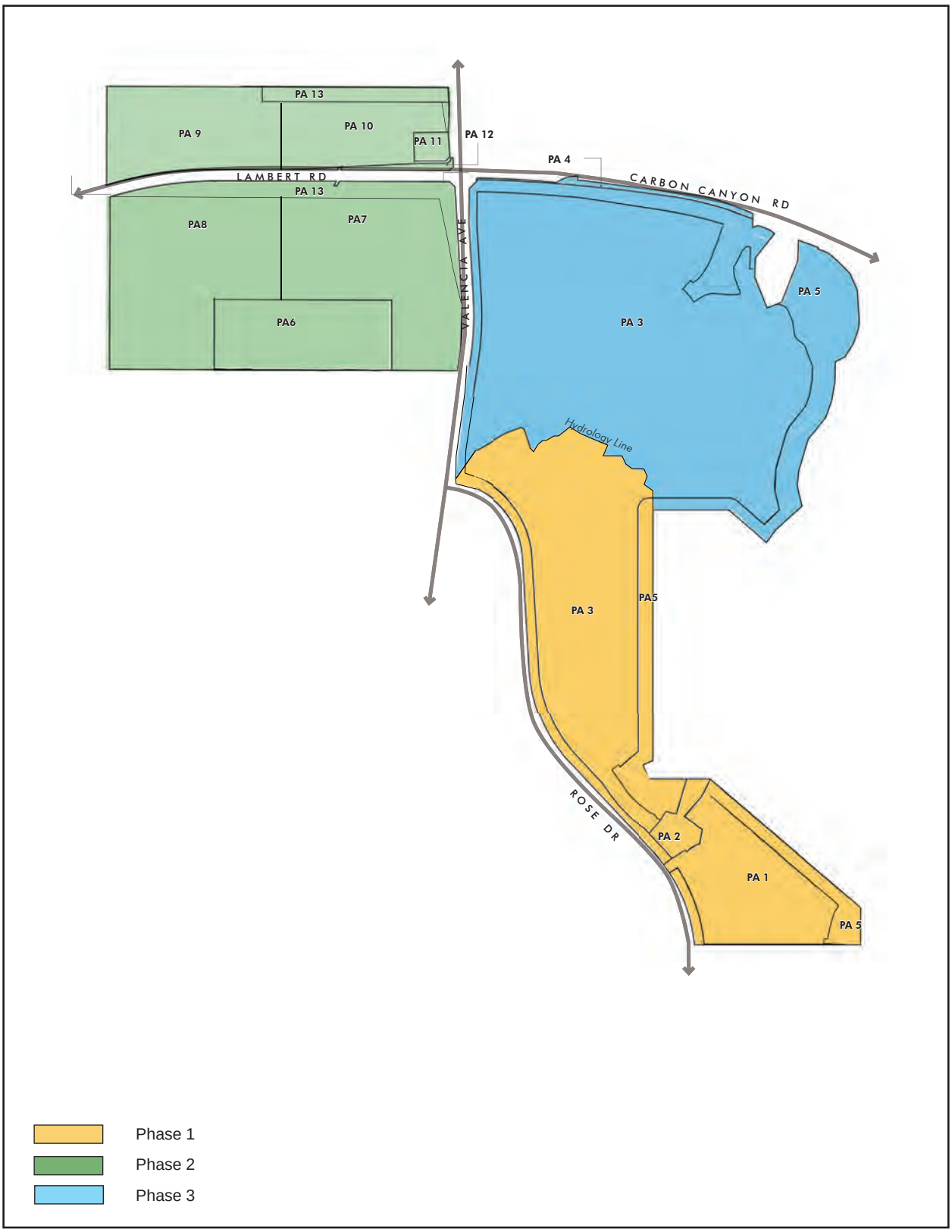
Brea 265 Specific Plan would be implemented in three phases based on oil field abandonment, remediation, and construction of necessary infrastructure. The anticipated development phasing is shown on Figure 3-24, *Conceptual Phasing Plan*, and Table 3-3, *Project Phasing*. Initial development (Phase 1) is tentatively scheduled for the southeastern portions of the project site, which are currently agricultural and never had oil production. Phase 2 would involve development of project site west of Valencia Avenue and would require some remediation. The northern portion of project site east of Valencia Avenue would require extensive remediation and would likely to start once Phase 1 and Phase 2 are well under construction. Later development phases could occur either sequentially or concurrently, and the phasing sequence is subject to changes in response to market conditions and demands provided that the City's Community Development Director reviews and approves the phasing changing plan. Project phasing may also be altered subject to approval by the affected City departments and revisions to the Development Agreement, as deemed necessary or appropriate.

Table 3-3 Project Phasing

Planning Area (PA)	Land Use Category	Gross Area (AC)	Dwelling Units (DU)
Phase 1			
1	MDR	13.9	143
2	PR	2.1	N/A
3	LDR	35.4	210
5	OS	16.6	N/A
	Phase 1 Subtotal	**68**	**353**
Phase 2			
6	PR	13.0	N/A
7	MDR	23.2	278
8	MDR	25.8	229
9	LDR	14.3	54
10	LDR	9.9	51
11	LDR	1.0	N/A
12	ROW	0.8	N/A
13	OS	6.5	N/A
	Phase 2 Subtotal	**94.5**	**612**
Phase 3			
3	LDR	74.5	135
4	ROW	1.2	N/A
5	OS	23.9	N/A
	Phase 3 Subtotal	**99.6**	**135**
Total		**262.1**	**1,100**

Note: The phasing plan may be altered by the master developer of Brea 265 at any time, provided that the City's Community Development Director reviews and approves the phasing changing plan. Project phasing may also be altered subject to approval by the affected City departments and revisions to the Development Agreement, as deemed necessary or appropriate.

Figure 3-24 - Conceptual Phasing Plan
3. Project Description



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Scale (Feet)

Source: KYGY Group, 2022

3. Project Description

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The master developer of Brea 265 may alter the project phasing program at any time, provided that an orderly buildout of the community and necessary infrastructure, access, and public facilities are constructed to adequately serve the development. However, the changes must be reviewed and approved by the City by providing a notice of the phasing change in writing to the City's Community Development Director within 30 calendar days of the change. In addition, project phasing may be altered subject to approval by the affected City departments and revisions to the Development Agreement, as deemed necessary or appropriate.

For the purposes of the DEIR analysis, it was assumed that the site preparation work would commence in mid-2023, and the entire construction would be completed between 2030 and 2035. Phase 1 development would start in August 2023 and end in May 2025; Phase 2 would start in October 2024 and end in July 2027; and Phase 3 would start in August 2026 and end in May 2030.

3.4 INTENDED USES OF THE EIR

This is a program EIR that examines the potential environmental impacts of the Brea 265 Specific Plan. This DEIR also addresses various actions by the City and others to adopt and implement the proposed project. It is the intent of the DEIR to evaluate the environmental impacts of the proposed project, thereby enabling the City of Brea, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are listed here.

Lead Agency	Action
City of Brea	• Approve the proposed project and related discretionary actions needed for project construction and operation. • Certify the EIR.
Responsible Agencies	**Action**
Orange County Local Agency Formation Commission	• Approve annexation
City of Brea Fire Department	• Approve the building and emergency access plans for compliance with the California Fire Code. • Approve Fire Master Plan
Regional Water Quality Control Board	• Issue a National Pollutant Discharge Elimination System Permit. • Approve necessary jurisdictional resources permit.
Orange County Sanitation District	• Approve necessary sewer improvements.
South Coast Air Quality Management District	• SCAQMD Rule 201 (Permit to Construct) and SCAQMD Rule 203 (Permit to Operate): A permit is required to construct and operate any stationary equipment that generates new emissions (e.g., boiler or emergency generator). • SCAQMD Rule 403 (Large Operation Notification Form): The applicant/applicant's construction contractor is required to file a Large Operation Notification Form with SCAQMD for grading activities and prepare and implement a dust control plan.
Orange County Flood Control District (OCFCD)	• Provide necessary infrastructure improvements.
Orange County Public Works	• Approve necessary improvements within OCFCD's right-of-way.
Orange County Water District	• Provide necessary infrastructure improvements.

3. Project Description

California Department of Fish and Wildlife	• Approve necessary biological and jurisdictional resources permit.
US Department of Fish and Wildlife Service	• Approve necessary biological and jurisdictional resources permit.
US Army Corps of Engineers	• Approve necessary jurisdictional resources permit.
California Department of Conservation, Geologic Energy Management Division (CalGEM)	• Approve necessary permits for oil well abandonment.

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 Brea is in the northeast portion of Orange County and is bordered by the cities of La Habra to the northwest; Fullerton to the southwest and south; Placentia to the south; Yorba Linda to the southeast and east; unincorporated Orange County to the east, northeast, and north; Chino Hills in San Bernardino County to the northeast; and unincorporated Los Angeles County to the northwest (see Figure 3-1, *Regional Location*, in Chapter 3, *Project Description*).

The project site is north of State Route 90 (SR-90) and east of State Route 57 (SR-57). It covers 262.1 acres in the City of Brea and City's sphere of influence (SOI)—43 acres are in incorporated Brea, and 219.1 acres are in the SOI.

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 six counties—Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties—191 cities, and more than 19 million residents. SCAG is the nation's largest metropolitan planning organization, with jurisdiction over 38,000 square miles. SCAG is a regional planning agency and 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 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), "Connect SoCal," was adopted in September 2020. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments,

nonprofit organizations, businesses, and local stakeholders in the member counties. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. It builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for residents of southern Californians. Connect SoCal outlines over 4,000 transportation projects through 2045, such as highway improvements, railroad grade separations, bicycle lanes, new transit hubs, and replacement bridges. In addition, Connect SoCal is supported by a combination of transportation and land use strategies that outline how the region can achieve California's greenhouse gas emission reduction goals and federal Clean Air Act requirements. The plan also strives to achieve broader regional objectives, such as the preservation of natural lands, improvement of public health, increased roadway safety, support for the region's vital goods movement industries, and more efficient use of resources.

The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional greenhouse gas emissions reduction targets identified by the California Air Resources Board. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency. The proposed project's consistency with the applicable 2020-2045 RTP/SCS policies is analyzed in detail in Section 5.11, *Land Use and Planning*.

South Coast Air Basin Air Quality Management Plan

The project site is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (AQMD). Pollutants emitted into the ambient air by stationary and mobile sources 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. 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 (CARB 2017a). The proposed project's consistency with the applicable AAQS is discussed in Section 5.3, *Air Quality*.

Greenhouse Gas Emissions Reduction Legislation

Current State of California guidance and goals for reductions in greenhouse gas (GHG) emissions are generally embodied in Executive Order S-03-05; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); Executive Order B-15-30 and Senate Bill 32 (SB 32); SB 375; and Executive Order B-5518 and SB 100.

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction goals 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 established a legislative target for the year 2020 goal outlined in Executive Order S-03-05. CARB prepared its first Scoping Plan in 2008 outlining the State's plan for achieving the 2020 targets of AB 32 (CARB 2008).

In 2008, SB 375 was adopted to connect passenger vehicle 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 (VMT) and vehicle trips.

In September 2016, Governor Brown signed SB 32, making the Executive Order B-15-30 goal of a 40 percent reduction below 1990 levels by 2030 into a statewide mandated target. CARB issued an update to its Scoping Plan in 2017 for meeting the SB 32 reduction target (CARB 2017b).

Executive Order B-55-18 sets a goal for the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter. SB 100 would help the state reach the goal set by Executive Order B-55-18 by requiring that the state's electricity suppliers have a source mix that consists of at least 60 percent renewable/zero carbon sources in 2030 and 100 percent renewable/zero carbon sources in 2045.

The project's ability to meet these regional GHG emissions reduction target goals is analyzed in Section 5.8, *Greenhouse Gas Emissions*.

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analysis as part of CEQA compliance. With the adoption of the SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce VMT and contribute to the reduction of GHG emissions, as required by the California Global Warming Solutions Act of 2006 (AB 32).

SB 743 eliminates auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. 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)). The Natural Resources Agency adopted revisions to the CEQA Guidelines to implement SB 743 on December 28, 2018, and established new criteria for determining the significance of transportation impacts. Under the

revised Guidelines, effective July 1, 2020, VMT-related metric(s) that evaluate the significance of transportation-related impacts must be used under CEQA for development projects, land use plans, and transportation infrastructure projects.

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Location and Land Use

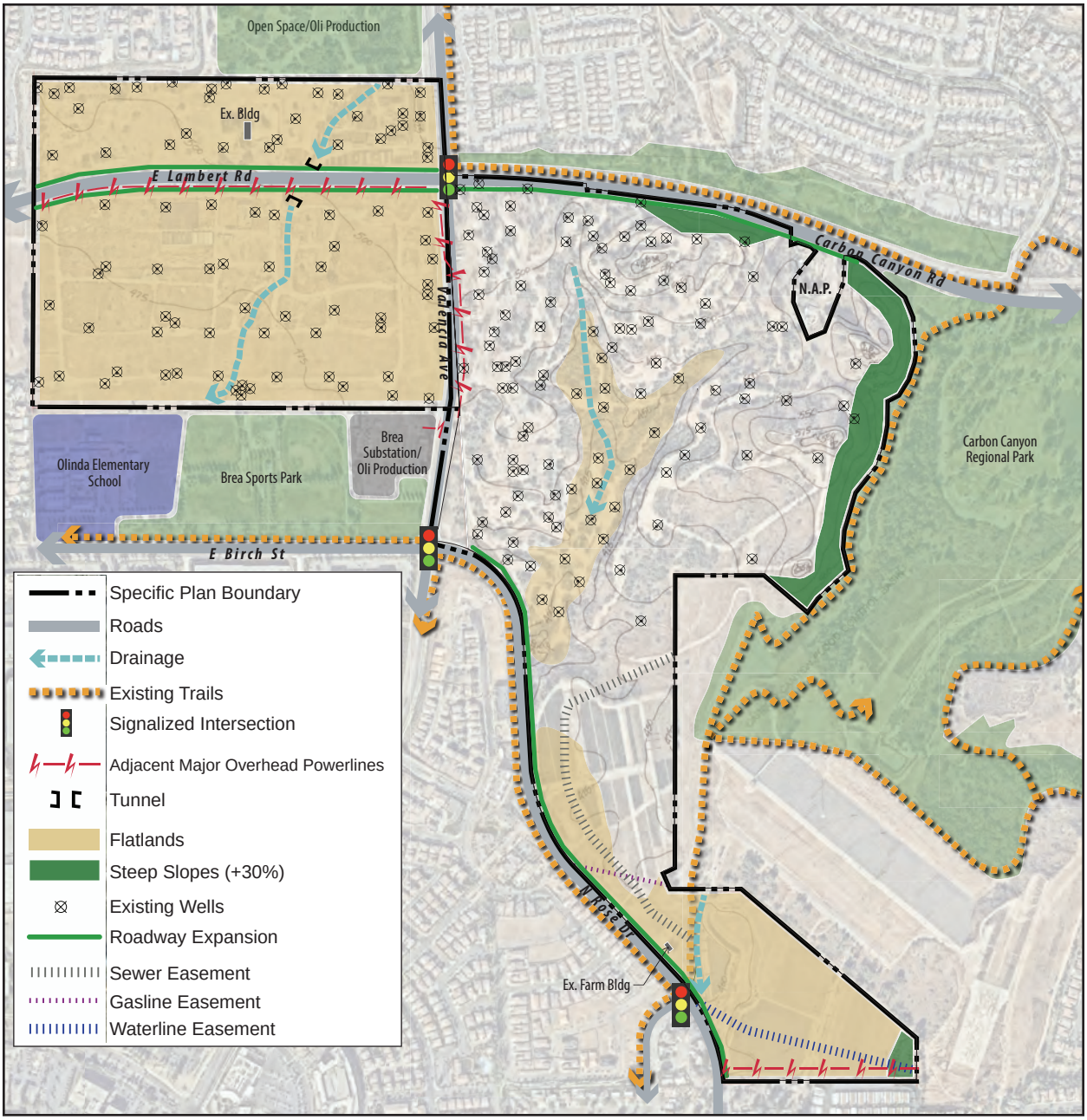
The project site is south of Lambert Road/Carbon Canyon Road, north of Rose Drive, east of Valencia Avenue and west of Carbon Canyon Regional Park, as shown on Figure 3-3, *Aerial Photograph*. The Specific Plan area is bisected by Valencia Avenue, which runs north-south, and by Lambert Road, which runs east-west. The 262.1-acre project site is an active oil operations site owned by Aera Energy, with the exception of the southern agricultural area. There is no public access. Existing trail systems are provided on surrounding streets outside of the project site and within Carbon Canyon Regional Park. Figure 4-1, *Project Site Existing Conditions*, shows conditions on the project site.

The project site has been used for oil production continuously since the early 1900s. Of the approximately 190 wells drilled on the site, 68 remain in operation and produce approximately 400 barrels per day. Oil operations will continue as outlined in the Development Agreement. After project entitlements are complete and before phased development, Aera Energy will discontinue all on-site oil operations and abandon and remediate the oil wells and production facilities in accordance with federal, state, and local regulations in advance of implementing a given project phase.

The 167.6 acres east of Valencia Avenue slope down from northeast to southwest, with more than 150 feet of elevation change. The remaining 94.5 acres west of Valencia Avenue slope from north to south, with an average slope of approximately 3 percent. As shown in Figure 4-2, *Existing Slope Analysis*, most of the Specific Plan area is considered flat because it falls into the 0 to 10 percent slope range, with elevations gradually increasing in the northeastern part of the site. Drainage naturally flows from the north to the south on the project site. A hilltop in the northeast of the project site provides views of surrounding terrain.

Figure 4-1 - Project Site Existing Conditions

4. Environmental Setting



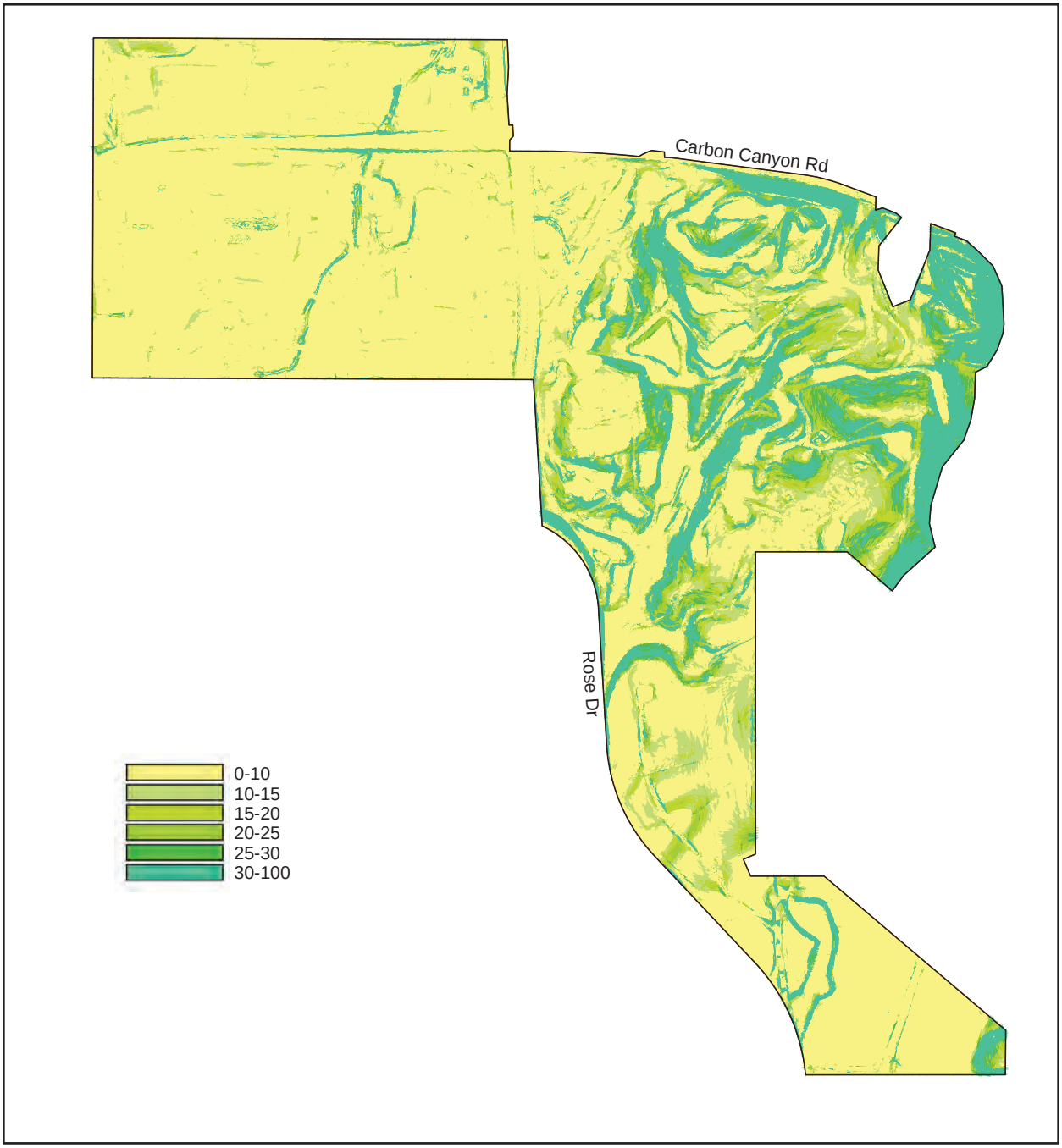
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Source: KTGY Group, 2021

4. Environmental Setting

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Figure 4-2 - Existing Slope Analysis
4. Environmental Setting



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Source: KTGY Group, 2019

4. Environmental Setting

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4.3.2 Surrounding Land Uses

The project site is generally bordered by residential uses to the west and north. A small area devoted to oil operations and open space is also to the north. The Olinda Elementary School, the Brea Sports Park, and the mixed-use community of La Floresta are adjacent to the site's southern border. A future city park site abuts the project site's northern boundary west of Valencia Avenue. Carbon Canyon Regional Park and the Carbon Canyon Dam are adjacent to the site's eastern border. Current access to Carbon Canyon Regional Park is formally from Carbon Canyon Road and informally through the Carbon Canyon Dam property at Rose Drive. Light industrial development is to the southwest of the Valencia Avenue/Birch Street intersection. Figure 4-3, *Surrounding Land Uses and Densities*, illustrates major land uses in the surrounding area. Other uses in the area include an employment center approximately one-quarter mile south of the project site, and Downtown Brea, Brea Mall, and City Hall are approximately three miles to the west of the project site. The Tracks at Brea Trail provides future trail connectivity to Downtown Brea, Brea Mall, and City Hall, as shown in Figure 4-4, *The Tracks at Brea Trail.*

4.3.3 Public Services and Utilities

Existing sewer, natural gas line, and water line easements are in the southeastern part of the project site. Major overhead power lines are on Lambert Road and Valencia Avenue. The following service providers provide utilities services to the project site.

- Water: City of Brea
- Wastewater: City of Brea and Orange County Sanitation District
- Stormwater: City of Brea Public Works Department and Orange County Flood Control District
- Solid Waste: Republic Services
- Electricity: Southern California Edison
- Natural Gas: Southern California Gas Company
- School: Brea-Olinda Unified School District
- Police: Brea Police Department
- Fire: Brea Fire Department

4.3.4 General Plan and Zoning

Approximately 43 acres of the project site are in Brea's corporate boundaries and designated "Hillside Residential" on the Brea General Plan Land Use Policy Map. The remaining 219.1 acres of the project are in unincorporated Orange County and in the southern part of Brea's SOI. The General Plan Land Use Policy

Map designates 124.6 acres of this "Hillside Residential" and 94.5 acres "Low Density Residential." Figure 3-7, *Existing and Proposed General Plan Land Use Designations*, shows these designations.

The 43 acres of the Specific Plan area in the city are zoned "HR Hillside Residential." The 124.6 acres in Brea's SOI east of Valencia Avenue are designated "HR Hillside Residential," and the other 94.5 acres in Brea's SOI west of Valencia Avenue are designated "R-1 Single-Family Residential." Figure 3-8, *Existing and Proposed Zoning Designations*, shows these designations.

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 to be "…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.

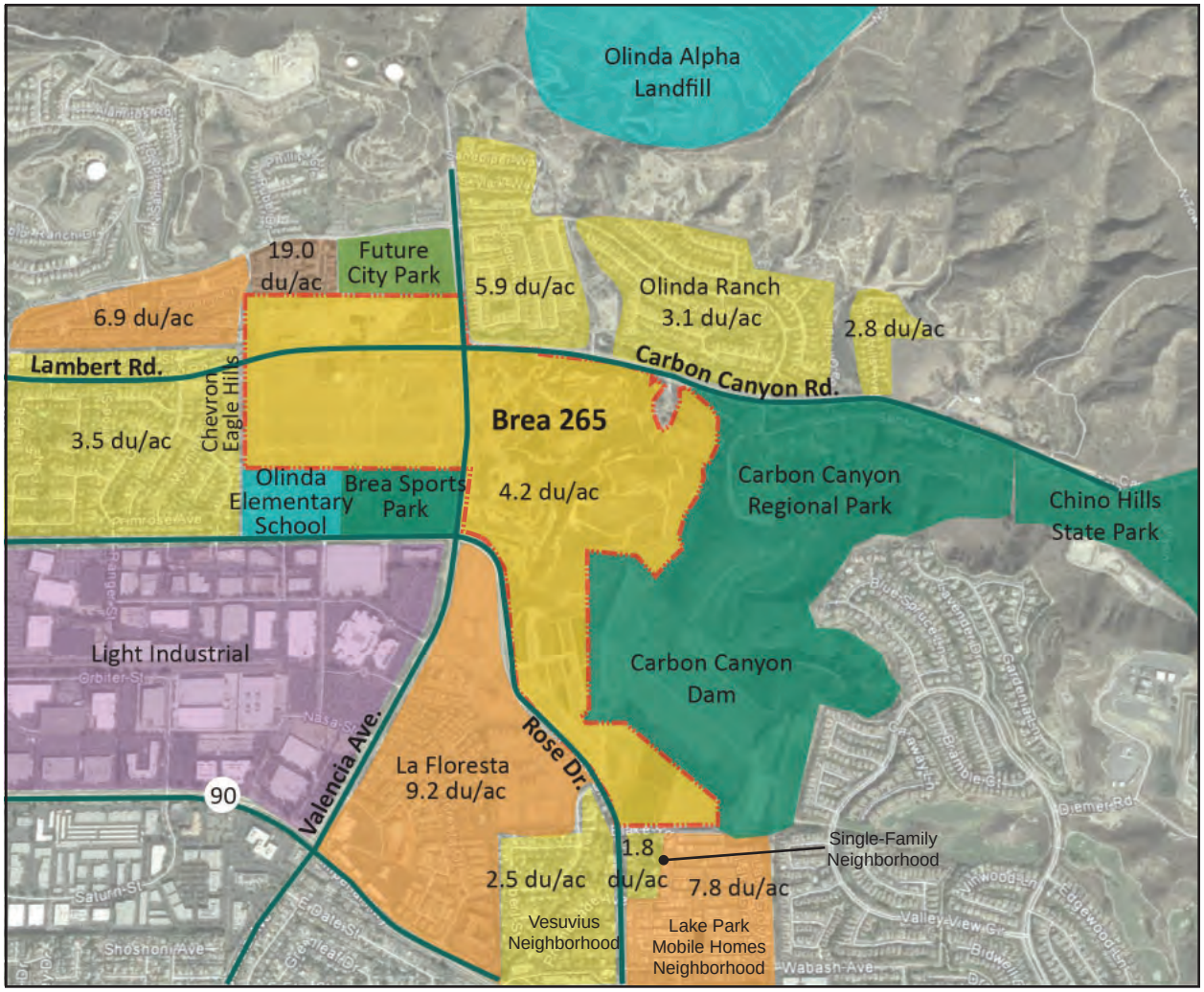
The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

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; or

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

Figure 4-3 - Surrounding Land Uses and Densities

4. Environmental Setting



Specific Plan Boundary

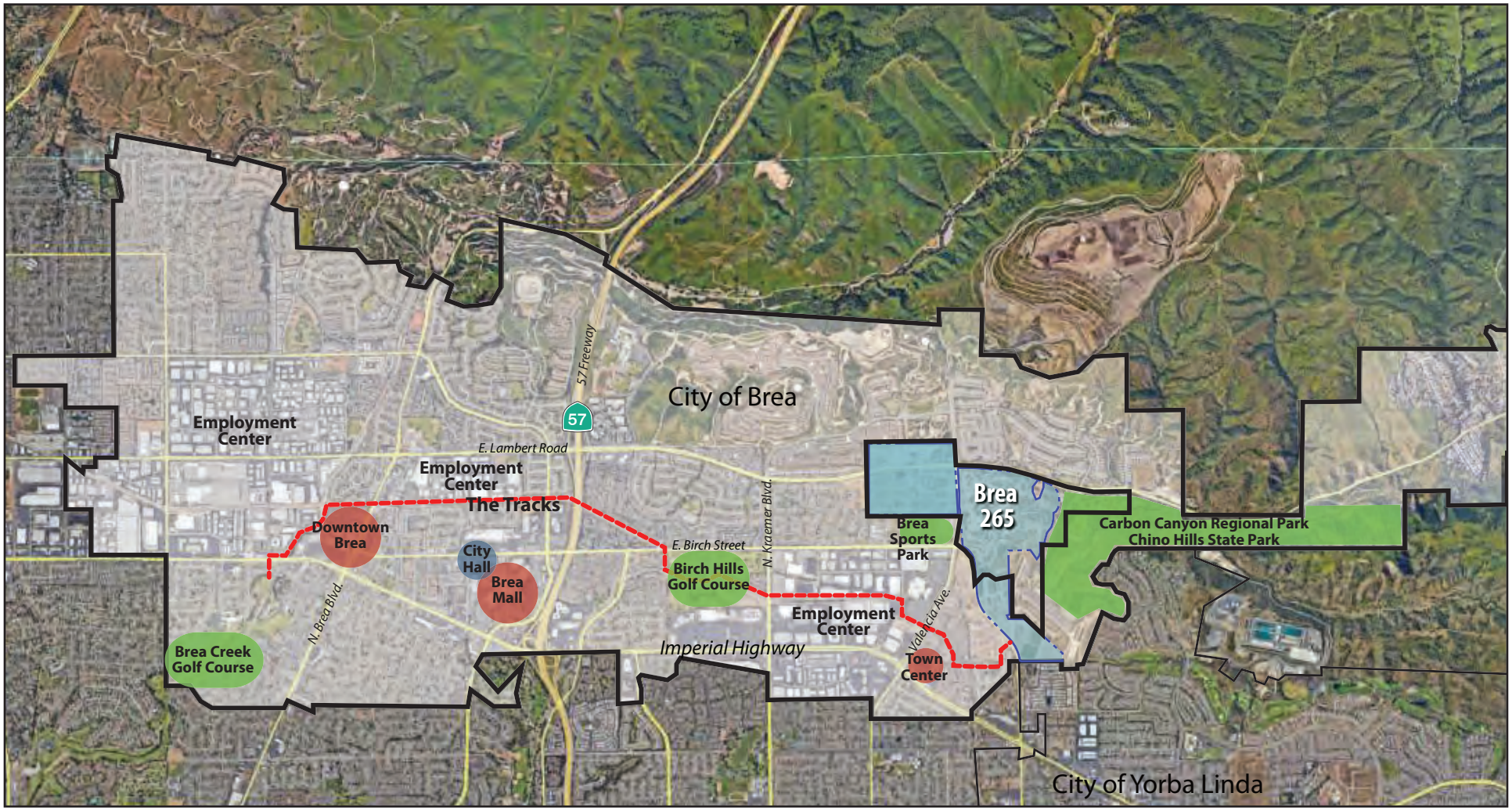
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Scale (Feet)

Source: KTGY Group, 2019

4. Environmental Setting

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Figure 4-4 - The Tracks at Brea Trail
4. Environmental Setting



Source: KTGY Group, 2021

4. Environmental Setting

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The cumulative impact analyses in this EIR uses a combination of method A and B. Generally, the growth projections that are identified in the Brea General Plan and related planning documents are used to evaluate regional or area-wide conditions. Table 4-1, *Related Cumulative Projects*, provides a list of cumulative projects used in this EIR.

Table 4-1 Related Cumulative Projects

Description	Location/Address	Size
City of Brea		
1. CVS	390 N. Brea Boulevard	13,000 SF Pharmacy with Drive-Through, 1,700 SF Coffee Shop with Drive-through
2. Brea Place	State College Boulevard at Birch Street	653 DU Apartments, 5,000 SF Office, 150 Room Hotel[9]
3. Downtown Hotel	220 S. Brea Boulevard	116 Room Hotel, 4,000 SF High Turnover Sit Down Restaurant
4. Mercury Apartments	Southeast corner of Berry Street at Mercury Lane	120 DU Apartments
5. Brea Mall Mixed-Use Project	1065 Brea Mall	Demolish existing 161,990 SF Sears department store and develop 183,615 SF retail space inclusive of a 50,019 SF sporting goods store and a 128,000 SF health club, and a 312 DU apartment building
6. Brea Plaza	409-477 S. Associated Road and 1555, 1609, 1623, 1643 E. Imperial Highway	Demolition of an existing 18,450 SF movie theater and the construction of a mixed-use development with 21,355 SF of office space and 229 apartment units
7. Central Park Village	340-420 W. Central Avenue	62 DU townhomes and 20 DU apartments
8. New Industrial Building	201 N. Berry Street	109,125 SF warehouse
9. Alvero Assisted Living	251 S. Randolph Avenue	80 rooms with 82 beds residential care facility
10. Extra Space Self Storage	2700 E. Imperial Highway	126,546 self-storage facility
11. Brea Imperial Center	391 S. State College Boulevard	5,000 SF restaurant, 2,300 SF bagel/coffee shop, 1,600 SF café, 3,867 SF In-N-Out, 28,145 SF retail, and 4,400 SF bank to replace existing land uses which include 4,050 SF food uses, 24,481 SF retail, 4,400 SF bank, 2,325 SF medical office, 10,074 SF health studio spa.
12. Transwestern	285 S. Berry Street and 711 W. Imperial Highway	126,797 SF warehouse
13. The Phoenix Club	375 W. Central Avenue	8,350 SF restaurant with banquet hall
14. Aldi Grocery Store	2395 E. Imperial Highway	21,106 SF grocery store
15. Starbucks with Drive-Thru	2 Pointe Drive	2,400 SF coffee shop with drive-thru
16. Lambert Road Condos	700-800 W. Lambert Road	24 DU condominiums
17. Brea Metro Office Condos	330 E. Lambert Road	33 DU condominiums
18. Father's House	245 W. Birch Street	299 seat religious assembly

4. Environmental Setting

Table 4-1 Related Cumulative Projects

Description	Location/Address	Size
19. Cha Cha's Expansion	110 W. Birch Street	Existing restaurant expansion of 2,710 SF
20. Western Realco	2929 E. Imperial Highway	131,500 SF industrial building
21. CAMP Transformation	910 E. Birch Street, Suite 250	4,100 SF Fitness Center
22. Brea Express Wash	300 S. Brea Boulevard	4,254 SF express car wash
23. Raising Cane's	255 E. Imperial Highway	Demolish existing 9,588 SF office building and construction of a 4,047 SF fast food restaurant with drive-through
City of Fullerton		
24. 3105 Yorba Linda Boulevard	3105 Yorba Linda Boulevard	4,840 SF drive-through car wash
25. Beckman Business Center	4300 North Harbor Boulevard	522,250 SF Warehousing, 166,185 SF General Light Industrial, 105,880 SF Manufacturing, 42,000 SF Office, and 142,350 SF fulfillment center
City of Chino Hills		
26. Woodbridge Pacific Group (Canyon Hills/Hillcrest)	Northwest of Carbon Canyon Road and west of Canyon Hills Road	38 DU single family detached
27. Stonefield Development	Northwest of Carbon Canyon Road and east of Fairway Drive	28 DU single-family
28. Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum	South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel	7-Lot Subdivision with semi-custom single-family homes, plus 3 classrooms/71 student addition to the Lutheran school
29. Coptic Orthodox Church	East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property	14,695 SF multipurpose room, 8,645 SF Sanctuary and 555 SF Bookstore
30. Buddhist Temple of Chino Hills	Northeast of Chino Hills Parkway and Rustic Drive	23,400 SF Buddhist temple expansion
31. Hidden Oaks	East of Carbon Canyon Road at Canyon Hills Road	53 DU Single Family
32. Greening Los Serranos Golf Course Project	15656 Yorba Avenue	124 DU single family, 532 DU multifamily
33. Paradise Ranch	East of Canyon Hills Road and south of Esquilime Drive	51 DU single-family

Source: LLG 2021.
DU = dwelling unit
SF = square feet

Depending on the environmental category, the cumulative impact analysis may use either source A or B. Some impacts are site specific, such as cultural resources, and others may have impacts outside the city boundaries, such as regional air quality. Please refer to Chapter 5, *Environmental Analysis*, of this DEIR for a discussion of the cumulative impacts associated with development and growth in the city and region for each environmental resource area.

Cumulative impact analyses are based on the most appropriate geographic boundaries. Several potential cumulative impacts that encompass regional boundaries (e.g., air quality and traffic) have been addressed in the

context of regional plans and defined significance thresholds. Climate change is a global issue, and the cumulative impacts analysis has been addressed in the context of state regulations and regional plans designed to address the global cumulative impact. The following is a summary of the approach and extent of cumulative impacts, which are further detailed in each environmental topical section:

- **Aesthetics.** Aesthetic impacts are based on the City of Brea and its vicinity encompassing the cumulative project sites.
- **Agricultural Resources.** The area considered for cumulative impacts for this project is the County of Orange.
- **Air Quality.** Air quality impacts include regional (cumulative) impacts and localized impacts. For cumulative impacts, the analysis is based on the regional boundaries of the Southern California Air Basin (SoCAB).
- **Biological Resources.** The geographical area for cumulative analysis would encompass areas near the Chino Hills State Park and the Puente-Chino Hills wildlife corridor area.
- **Cultural and Paleontological Resources.** Cumulative impacts consider the potential for the proposed project in conjunction with other cumulative development projects in the city for historical, archaeological, and paleontological resources and for tribal cultural resources significant to local Native American tribes.
- **Energy.** Cumulative impacts are based on potential related development within each utility provider's boundaries—Southern California Edison, Southern California Gas Company.
- **Geology and Soils.** Geology and soils impacts are site specific, and the cumulative impacts area considered for geology and soils impact is limited to the project site boundaries.
- **Greenhouse Gas (GHG) Emissions.** GHG emissions impacts are not site-specific impacts but cumulative impacts. Therefore, the analysis in Section 5.8 provides the analysis to determine whether the project would make a cumulatively considerable contribution to a significant cumulative GHG emissions impact.
- **Hazards and Hazardous Materials.** Impacts are typically site specific and generally would not combine with impacts of other projects to result in cumulatively considerable impacts, but the cumulative impacts analysis in this EIR considers the combined effects of nearby past and reasonably foreseeable projects in conjunction with the project.
- **Hydrology and Water Quality.** Impacts are not site specific because stormwater runoff from the project site could impact downstream water quality and off-site drainage facilities. Cumulative impacts are based on the San Gabriel River-Coyote Creek Watershed and the Santa Ana River Watershed.
- **Land Use and Planning.** Cumulative impacts are based on applicable jurisdictional boundaries and related plans, including the City of Brea General Plan and regional land use plans (e.g., SCAG's RTP/SCS).

- **Mineral Resources.** The cumulative impact area considered for mineral resources impacts is the City's incorporated areas.

- **Noise.** Cumulative traffic noise impacts are based on the traffic study, which considers the regional growth based on citywide and regional projections. Cumulative construction impacts are based on nearby projects that may have concurrent construction schedules. Cumulative operational impacts are based on existing development combined with the project and reasonably foreseeable nearby future development.

- **Population and Housing.** Cumulative impacts are based on demographic projections for the City of Brea.

- **Public Services.** Cumulative impacts are based on potential related development within each service provider's boundaries—Brea Fire Department, Brea Police Department, Brea-Olinda Unified School District, and Orange County Public Library.

- **Recreation.** The cumulative impact area considered for recreation is the City's incorporated and SOI areas.

- **Transportation.** The traffic study considers the project's cumulative contribution to traffic and transportation issues in the project vicinity. The cumulative levels of service (LOS) and vehicle miles traveled (VMT) traffic analysis is based on a regional transportation demand model and incorporates regional growth projections identified by Orange County Transportation Authority using the OCTAM 5.0 Year 2045 Model. The cumulative analysis of transit, bicycle, and pedestrian transportation impacts is based on City plans and policies. The traffic analysis includes background traffic growth using an ambient traffic growth factor (1 percent per year) to account for regular growth in traffic volumes due to the development of projects outside the study area as well as traffic growth from nine other known development projects (related projects) in the City of Brea and the surrounding cities, as shown in Table 4-1.

- **Tribal Cultural Resources.** Cumulative impacts related to tribal cultural resources are based on the local Native American tribes' culturally significant areas and include, but are not limited to, cultural landscapes and regions, specific heritage sites, and other tribal cultural places.

- **Utilities and Service Systems.** Cumulative impacts are based on potential related development within each utility provider's boundaries—e.g., Brea Public Works Department, Southern California Edison, Southern California Gas Company.

- **Wildfire.** Cumulative impacts related to wildfire are lands within Orange County that are categorized as state responsibility areas, federal responsibility areas, or very high fire hazard severity zones in a local responsibility area.

5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes its 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. This scope was determined in the notice of preparation (NOP), which was published December 14, 2018 (see Appendix A), and through public and agency comments received during the NOP comment period from December 14, 2018, to January 23, 2019 (see Appendix B). Environmental issues and their corresponding sections are:

- 5.1 Aesthetics
- 5.2 Agricultural and Forestry Resources
- 5.3 Air Quality
- 5.4 Biological Resources
- 5.5 Cultural Resources
- 5.6 Energy
- 5.7 Geology/Soils
- 5.8 Greenhouse Gas Emissions
- 5.9 Hazards & Hazardous Materials
- 5.10 Hydrology/Water Quality
- 5.11 Land Use/Planning
- 5.12 Mineral Resources
- 5.13 Noise
- 5.14 Population and Housing
- 5.15 Public Services
- 5.16 Recreation
- 5.17 Transportation
- 5.18 Tribal Cultural Resources
- 5.19 Utilities/Service Systems, and Energy
- 5.20 Wildfire

Sections 5.1 through 5.20 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.

5. Environmental Analysis

Organization of Environmental Analysis

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

- Environmental Setting
- Thresholds of Significance
- Plans, Programs, and Policies
- Environmental Impacts
- Cumulative Impacts
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in This Draft EIR

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.

- **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 describes impacts of the proposed project on visual character, visual and scenic resources, and light and glare. The information in this section is based on the Brea 265 Specific Plan and review of aerial photographs, street views, and other available information.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY BACKGROUND

Scenic Highway Program

California's Scenic Highway Program was created by the legislature in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment (Caltrans 2014). The State Scenic Highway System lists highways that are either eligible for designation as scenic highways or have been officially designated. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

City of Brea General Plan

Community Resources Element

The community resources element indicates that scenic resources enhance the visual character of the community and provide distinguishing characteristics; they are invaluable assets that benefit a community. It identifies scenic qualities of the Puente and Chino Hills, which include prominent ridgelines, scenic corridors and canyons, view corridors and vista points, roadways through undisturbed habitat, highways, and natural landscaping. As shown in Figure 5.1-1, *Brea Scenic Resources*, the project site is adjacent to Carbon Canyon Regional Park and south and west of Chino Hills State Park. Two view corridors are identified along Rose Drive adjacent to the project site's southern boundary, with views of the hills to the northeast from urban areas. The community resources element has the following goals and policies pertaining to the aesthetic quality of the Brea.

Goal CR-10: Pursue aggressively the preservation and protection of scenic resources.

- **Policy CR-10.1.** Create and enforce special standards for development occurring within potential scenic highway corridors.
- **Policy CR-10.2.** Identify streets with unique man-made or natural characteristics for special consideration as scenic routes.
- **Policy CR-10.3.** Manage stands of mature trees, particularly native species, as unique and visual resources.
- **Policy CR-10.4.** Preserve major rock outcroppings as unique landmarks and visual resources to the maximum extent possible.

- **Policy CR-10.5.** Preserve stream courses in their natural state, as they represent a recreation resource, provide community identity, and serve as unifying corridors in the planning area.

- **Policy CR-10.6.** Work aggressively with Orange County, Los Angeles County, State, and other appropriate public agencies, private entities and landowners to conserve, protect and enhance natural resources, particularly within the sphere of influence.

Community Development Element

Five residential land use designations are established to reflect the diverse residential character of Brea. New development must be compatible with and complement existing residential neighborhoods. The project site is designated Hillside Residential and Low Density Residential. Special standards address residential development in hillside areas.

Properties designated Hillside Residential are moderately to severely constrained by unique or significant features such as ridgelines, earthquake faults, steep and/or unstable slopes, creeks, sensitive habitat, sensitive wildlife species, mapped landslides, soil conditions, accessibility issues, and wildland fire hazards. Such properties are subject to the City's Hillside Management Ordinance. The Low Density Residential land use designation provides for low-density single-family dwellings and accessory buildings. Types of uses include detached single-family homes and attached single-family residences (townhouses, row houses). Other uses consistent with zoning ordinance requirements include: group homes, religious and similar institutional facilities, public and private schools, hiking and other trails, and public parks.

The community development element also identifies six focus areas that need special planning attention: 1) the Northwest Neighborhoods; 2) Downtown Brea; 3) Historic Brea; 4) Carbon Canyon and Olinda Village, 5) Hillsides and Unincorporated Brea; and 6) Southeast Brea. The southern portion of the project site is in the city, specifically, in the Southeast Brea focus area, as shown in Figure CD-5 in the community development element. The northern portion of the project site is in unincorporated Orange County and not in a focus area. The community development element has goals and policies pertaining to aesthetic quality of Brea. Policies related to development in Southeast Brea are:

Southeast Brea

Goal CD-9: Create a dynamic, mixed-use urban village that integrates a range of housing types (including senior housing), moderate-intensity commercial uses, educational and public uses, and parks.

- **Policy CD-9.1.** Ensure that new commercial uses complement rather than compete with businesses along Imperial Highway and in Downtown.

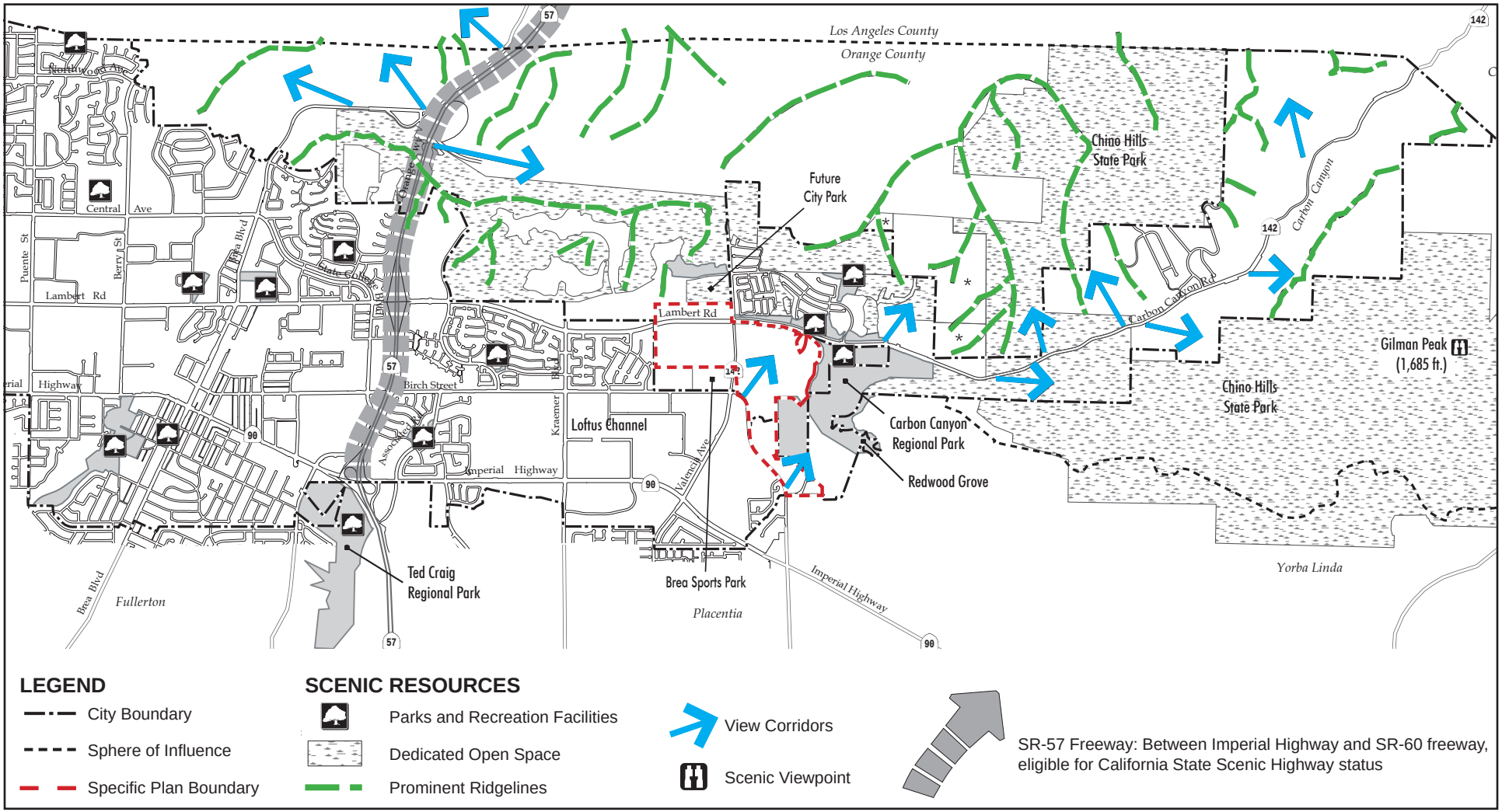
- **Policy CD-9.2.** Accommodate emerging housing trends, and encourage pedestrian linkage to surrounding neighborhoods and activity centers.

- **Policy CD-9.3.** Encourage the establishment of community recreation and park facilities in the area.

- **Policy CD-9.4.** Support efforts to establish quality, community institutions in the area.

Figure 5.1-1 - Brea Scenic Resources

5. Environmental Analysis



Note: Parcels identified with an asterik have the potential to become mitigation bank properties. This does not preclude any other parcel within the planning area from being designated for or used as mitigation bank properties.

Source: City of Brea, 2003; PlaceWorks, 2021

0 1
Scale (Miles)

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AESTHETICS

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- **Policy CD-9.5.** Provide quality, affordable housing that would accommodate young families, college students, and educators.
- **Policy CD-9.6.** Preserve open space within this area, and provide outdoor recreation facilities.
- **Policy CD-9.7.** Strongly encourage the master planning of any large contiguous land holdings in this area.
- **Policy CD-9.8.** Strongly encourage the prezoning and annexation of the unincorporated properties in this area into the City the Brea in order to avoid the creation of new County islands.

The community development element provides an urban design plan at a citywide level, identifying programs and improvements that would enhance the visual character of Brea and create a distinct identity. Figure CD-13 of the general plan, Urban Design District Map, designates broad areas of community, each featuring a relatively consistent character and sometimes a highly unique identity. The project site encompasses three urban design districts, the East Brea Neighborhoods for the area west of Valencia Avenue, the East Hillsides for the majority of area east of Valencia Avenue, and the Hartley Center & Environs for the area near Rose Drive.

Brea Municipal Code

The Brea Municipal Code Chapter 20.206, HR Hillside Residential Zone (Hillside Management Ordinance), has objectives to facilitate and permit the orderly development of property within hillside areas through a set of hillside development standards that protect the public and preserve natural resources.

Municipal Code Chapter 20.208, R-1 Single Family Residential Zone, establishes permitted uses and development standards to provide an environment conducive to the development of single-family homes, with no mixed use or incompatible uses.

5.1.1.2 EXISTING CONDITIONS

Brea lies at the base of the Puente and Chino Hills, which provide a natural backdrop and scenic contrast to the relatively flat lands on which much of the city has been developed (Brea 2003). These hills offer a variety of scenic resources, including open space areas, ridgelines, creeks, view corridors and vista points, and vegetation and natural landscaping. The approximately 166.2-acre portion of the project site east of Valencia Avenue is designated Hillside Residential Zone, and the City's Hillside Management Ordinance emphasizes ridgelines and ridgetop protection to maintain viewsheds from the Chino Hills State Park and Telegraph Canyon.

The project site is currently being used for oil production, with a nursery on the eastern side. Numerous roadways associated with oil field exploration and production exist throughout the site. The southern portion of the project site, which is in the city, is used for agricultural purposes. The site was used extensively in the past for agricultural purposes. Small-scale sand and gravel quarrying also occurred on-site in the past. The Carbon Canyon flood control dam and flood basin lie immediately off-site of the south-central portion of the project site.

Several utilities cross the site within easements. A Metropolitan Water District easement crosses the far southern portion of the project area to Rose Drive. A 30-inch, high-pressure gas line crosses the southern portion of the project site below the Carbon Canyon dam, and a Mobil Oil gasoline line runs in a roughly north-south direction across the eastern portions of the site from Blake Road to Carbon Canyon Road. The Carbon Canyon Dam sewer line is present, as are numerous other utilities associated with the existing oil field production and the nursery.

Landform

The project site is characterized by low-lying terraces with minimal relief on the southern portions. The northeastern portion of the project site consists of rounded hills and ridgelines of moderate height with intervening canyons and draws. A draw is the low ground formed by two parallel ridges or spurs. Draws are similar to valleys on a smaller scale, but valleys are parallel to a ridgeline, and a draw is perpendicular to the ridge and rises with the surrounding ground, disappearing upslope. A steep slope is on the northeastern edge of the project area above the Carbon Canyon streambed.

Total relief on-site is approximately 201 feet, and elevations range from 586 feet to 385 feet. The natural slopes are gentle to very steep and range from 1:1 to 5:1 (horizontal : vertical). Vegetation consists of native grasses, shrubs, and trees and ranges from light to locally heavy areas, with the heavy vegetation and trees concentrated in the draws and canyons.

Scenic Vistas and Corridors

A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of views. SR-91 between SR-55 and Weir Canyon Road in Anaheim is approximately 4.3 miles south of the project site and is the closest officially designated scenic highway to the project site. SR-57 between SR-60 and Imperial Highway is an eligible scenic highway and is approximately 1.4 miles to the west.

The City's community resources element identifies Carbon Canyon Road, Rose Drive, Brea Canyon Road, and SR-57 as view corridors, as shown in Figure 5.1-1, *Scenic Resources Map*. The community resources element also identifies prominent ridgelines and scenic viewpoints that are valuable to the city.

The Scenic Highway Plan of the County of Orange General Plan also designates Carbon Canyon Road as a viewscape corridor.

5.1.2 Thresholds of Significance

Appendix G of the CEQA Guidelines states that, "except as provided in Public Resources Code Section 21099," a project would normally have a significant effect on the environment if the project would:

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

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

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

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

5.1.3 Plans, Programs, and Policies

Project Design Features

PPP AE-1 The proposed project will be designed and constructed so that it would not conflict with the intent of the Municipal Code Chapter 20.206, Hillside Residential Zone. In accordance with Section 20.206.210(A), Other Regulations, Exterior Lighting, exterior lighting will be properly shielded to avoid glare and the spill of light to surrounding areas. Low-level lighting and the use of multiple low-profile fixtures will be used instead of fewer but taller fixtures. The proposed project will be designed so that emphasis on exterior lighting is on safety and landscaping lighting as opposed to building. The project applicant will present descriptions of exterior lighting in the design guideline manual required by Section 20.206.050 of the Municipal Code.

PPP AE-2 The proposed project will be designed and constructed to be consistent with the Brea 265 Specific Plan's Design Guidelines, which contain the community and neighborhood landscape, architecture, and community design guidelines.

5.1.4 Environmental Impacts

5.1.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; 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]

Vista points can be found throughout Brea, both from urban areas to the hills and from open spaces and ridgelines looking to Brea. Long-distance views of and from Chino Hills State Park are identified as scenic resources by the City's and Chino Hills State Park's general plans. A designated view point is at Gilman Peak at approximately 1,685 feet elevation and approximately 3.7 miles east of the project site.

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The City of Brea community resources element identifies scenic resources in the city as shown in Figure 5.1-1. It identifies Brea Boulevard/Brea Canyon Road, Rose Drive, and Carbon Canyon Road as view corridors. The Scenic Highway Plan of the County of Orange General Plan further designates Carbon Canyon Road as a viewscape corridor.

Brea Boulevard/Brea Canyon Road follows the contours of Brea Canyon, providing views of natural features and abandoned and active oil wells. Large oil production and drilling towers create a rustic image of the oil industry, which was the cornerstone of the community's founding. The portion of Brea Boulevard/Brea Canyon Road identified as a view corridor is approximately 1.6 miles northwest of the project site. Due to the varying topography and existing development, the project site cannot be seen from Brea Boulevard/Brea Canyon Road. And as shown in Figure 5.1-1, the main viewing points are to the northwest and east from this corridor, and the project site is to the southeast, and therefore would not directly obstruct any viewsheds.

Lambert Road toward the north end of the project site turns into Carbon Canyon Road at the intersection with Valencia Avenue. Carbon Canyon Road runs along the north side of the project site and continues in a northwest direction toward the city of Chino Hills. In the vicinity of the project site, the community resources element identifies views from Carbon Canyon Road looking northwestward. Further along Carbon Canyon Road toward Chino Hills, the community resources element identifies viewsheds looking northward and eastward. Development of the proposed project would not block or create a substantial adverse effect on views from Carbon Canyon Road because the identified views from Carbon Canyon Road look away from the project site.

Rose Drive runs along the southern side of the project site. Rose Drive provides views to the northeast through the project site. The project site is largely undeveloped and includes scattered oil activities in the northern portion and agricultural uses on the southern portion. As seen in Figure 5.1-2, *Scenic Views from Rose Drive*, views from Rose Drive looking northeastward through the project site consist of the project site in the foreground that extends toward the background. The background includes the project site's varying elevations, with its highest elevations on the northeastern portion of the project site. Figure 4-2, *Existing Slope Analysis*, illustrates existing slope conditions at the project site. As show, the on-site slope ranges from 0 to 100 percent. Beyond the project site, mountain ranges of Chino Hills State Park can be seen in the distance. Development of the proposed project would include 1,100 dwelling units with a maximum height of 35 feet above grade (two stories high) for single-family units and 45 feet above grade (three stories high) for row townhomes, attached motorcourt homes, and multifamily homes. Therefore, the proposed project would change the existing topography and visual character and potentially block the existing views toward the northeast from Rose Drive. However, the City's General Plan recognizes that most properties are privately held, and the City must allow property owners to obtain some economic value from their lands. To balance its preservation goals with the realities of transitioning land uses, the City provides an approach that works to protect sensitive lands by regulating the type, location, density, and intensity of residential development permitted. To this end, the City has established the Hillside Development Ordinance and General Plan policies that guide development size, type, location, density, and intensity. The City's General Plan policies for protecting the hillside urban design district include:

Figure 5.1-2 - Scenic Views from Rose Drive

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Photo 1. View from Rose Drive near Valencia Avenue looking northeast through the project site.



Photo 2. View from Rose Drive near Vesuvius Drive looking northeast through the project site.



Specific Plan Boundary

Photograph Location and Direction (2)

0 2,300

Scale (Feet)

Source: Google Earth Pro, 2019

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- Preserve the scenic beauty of Brea's hillsides, and minimize the visual and environmental impact of development upon sensitive hillside areas.

- Prohibit the construction of dwellings or other structures on the most sensitive hillside areas. In particular, prominent ridgelines, drainage ways, and significant stands of mature vegetation should be left undisturbed.

- Require sensitive grading techniques and other design measures that minimize the visual impact of development and make dwellings unobtrusive.

The Specific Plan's development standards are based on the Hillside Development Ordinance, although some deviations have been made as allowed by the Affordable Housing Incentives. The deviations proposed do not conflict with the intent of the Hillside Development Ordinance. The proposed project would implement sensitive grading techniques and other design measures that meet the strict hillside grading standards. On the eastern side of Valencia Avenue, elevations would range from 400 feet to 580 feet above mean sea level, intended to respond to the project site's land forms and topography, and the conceptual grading plan has been designed to balance cut and fill on-site. Contour grading will be used, where permitted by slope conditions, at the visible transitional areas between development and open space. The intent is to vary the horizontal lengths and vertical heights of constructed slopes to blend manufactured slopes into natural upgraded areas. Appropriate plants will restore the look of new slopes. Contour grading will not be used in areas where it would increase manufactured slope height. In addition, the proposed project preserves approximately 45 acres of the most sensitive hillside area. Therefore, the proposed grading would minimize the disturbance of existing topography and reduce potential aesthetics impact.

Additionally, the City's Urban Design Principles have the following design principle and guidelines for the protection of view corridors:

Design Principle: Build strong visual and physical connections throughout the community, for instance, through the protection of view corridors, and the provision of a comprehensive network of public spaces and paths.

Design Guidelines

- **Community Character (CC) 2-1.** Maintain and extend the existing street pattern; multi-block developments that close existing streets and alleys are discouraged.

- **CC 2-2.** Provide safe and accessible paths that promote physical continuity and connection; continuous sidewalks, as well as mid-block and open air passages are encouraged.

- **CC 2-3.** Protect and frame important views of natural and built features and landmarks; developments that obscure existing views along public rights-of-way are discouraged.

- **CC 2-4.** Enhance important visual and physical connections; for instance, use streetscape and landscape improvements to communicate street hierarchy and function, and identify key pedestrian connections.

The proposed project would not change the existing street pattern of Rose Drive and would not close any existing streets or alleys. The proposed project has been designed to create a collection of pedestrian-oriented neighborhoods, and incorporates elements such as continuous street trees, curb-separated sidewalks, and a variety of street patterns, thereby promoting physical continuity and connections throughout the community. The proposed also includes low-density residential dwelling units with the maximum height ranging from 40 to 45 feet in the hillside near Carbon Canyon Regional Park, while placing medium density residential units in the low-lying area near Carbon Canyon Dam. The proposed project would also provide a minimum 55-foot-wide, landscape setback from the face of the street curb to the residential property line on the east side of Rose Drive, further minimizing visual impacts from Rose Drive (see Figure 3-17, *Streetscape: Valencia Avenue and Rose Drive*, and Figure 3-18, *Street Sections: Rose Drive, Blake Road, and Enhanced Interior Local Collectors*).

The project site is near the Carbon Canyon Regional Park and the Redwood Grove. However, considering the topography along the east boundary of the project site that abuts Carbon Canyon Regional Park, where the elevation difference could be over 50 feet, the proposed project is not expected to adversely impact vantage points from the Carbon Canyon Regional Park. The scenic views are generally to the northeast from the Carbon Canyon Regional Park, not to the southwest toward the project site. Additionally, the hills along the east boundary of the project site near Carbon Canyon Regional Park would be undisturbed and remain as open space. Figure 5.1-3, *East Boundary Interface*, illustrates a sectional view of the east boundary near Carbon Canyon Park. As shown, open space with a 14-foot, multipurpose trail would be provided along the east interface before reaching the existing slope to the Carbon Canyon Park. This open space is part of the fuel modification zones, which range from a minimum of 20 feet to up to 170 feet. Therefore, the proposed project would not have a significant adverse impact on scenic views from Carbon Canyon Park. Views to the project site from Redwood Grove near Carbon Canyon Dam are currently obstructed and would remain as generally obstructed by Carbon Canyon Dam. The dam is approximately 490 feet high in elevation, and Redwood Grove is approximately 420 to 430 feet in elevation. The project site west of the Carbon Canyon Dam would have an approximately 410- to 420-foot elevation, and the building heights would not exceed 50 feet and not exceed the height of the dam. Therefore, the proposed project would not adversely affect views toward the project from the nearby Carbon Canyon Regional Park or Redwood Grove.

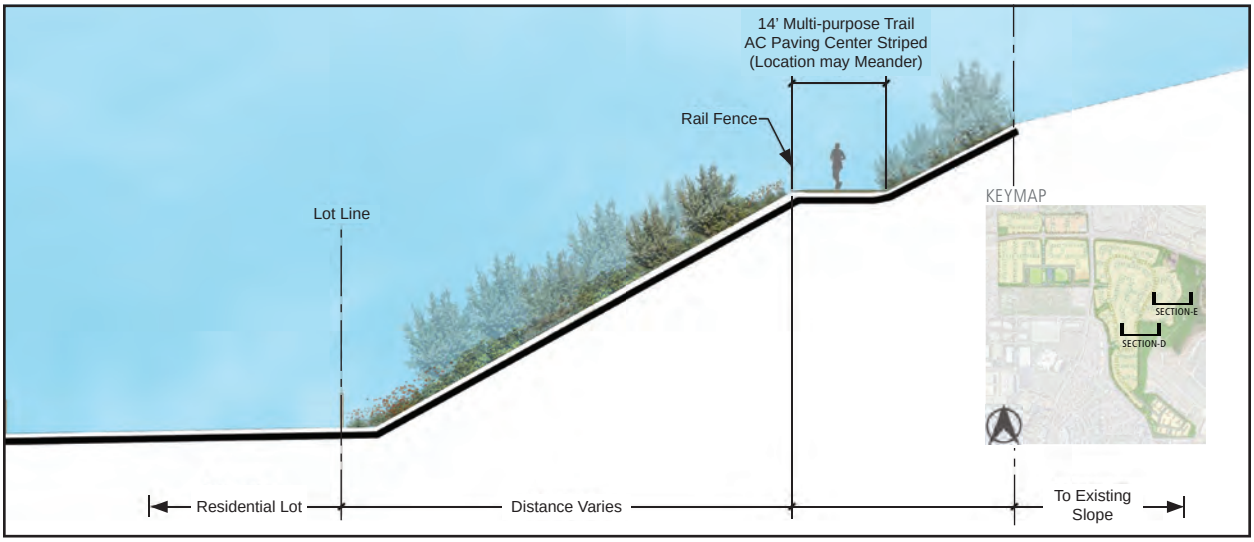
The proposed project has been designed to incorporate applicable general plan policies and community design guidelines to protect scenic vistas and would not result in a substantial adverse effect on scenic vistas, including view corridors from Rose Drive.

Level of Significance Before Mitigation: Less than significant impact.

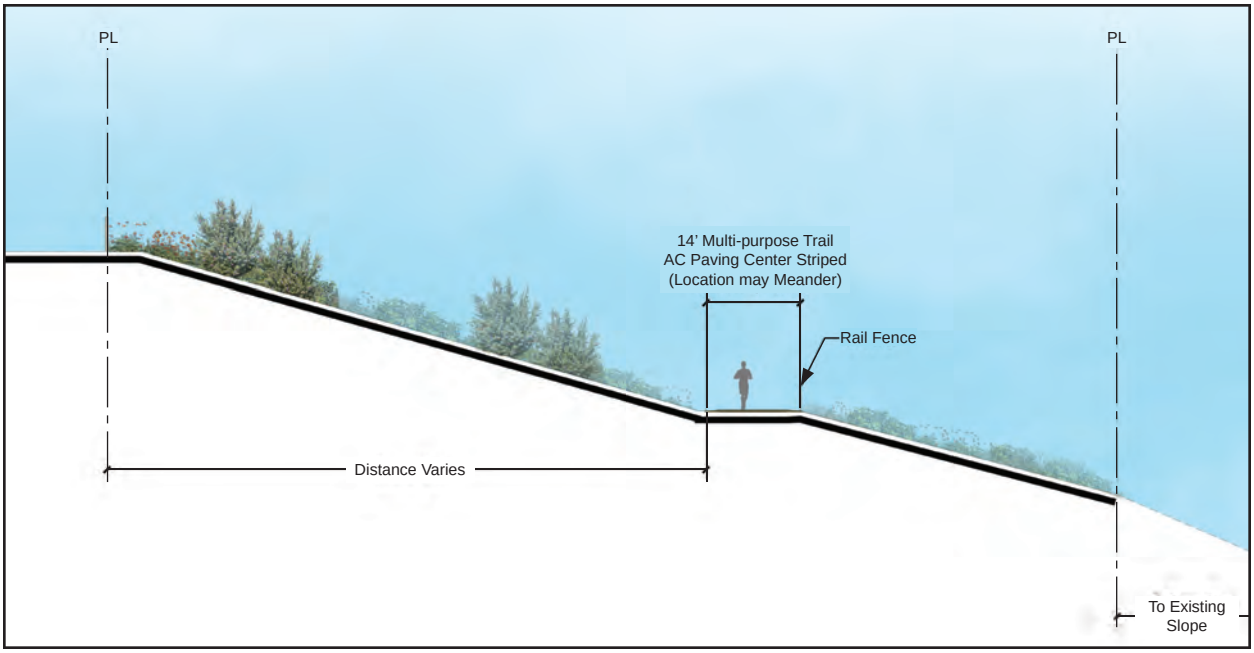
Impact 5.1-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. [Threshold AE-2]

As discussed under Section 5.1.1.2, the closest designated or eligible state scenic highway to the project site is the SR-57 freeway between SR-60 and Imperial Highway. The SR-57 is an eligible scenic highway and is approximately 1.4 miles to the west. Views along SR-57 toward the project site are generally constrained by topographical changes, trees and other existing vegetation, and existing development.

Figure 5.1-3 - East Boundary Interface
5. Environmental Analysis



SECTION D



SECTION E

Source: KTGY Group, 2021

NOT TO SCALE

5. Environmental Analysis
AESTHETICS

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As discussed in the Geotechnical Report prepared for the proposed project (Appendix F to the DEIR), the northeastern portion of the project site includes rounded hills and ridgelines of moderate height with intervening canyons and draws. A steep slope is on the northeastern edge of the property above Carbon Canyon stream bed (Alta 2018). So while the project site includes varying elevations, no significant rock outcroppings exist on the site. As discussed in Section 5.5, *Cultural Resources*, the proposed project would not result in an adverse change in the significance of historical resources. Policy CR-10.4 states "Manage stands of mature trees, particularly native species, as unique and visual resources." This policy is part of Goal CR-10, which seeks to preserve and protect scenic resources. Development of the proposed project would remove the existing native and/or mature trees on-site as identified in the Biological Resources Report (Appendix D to the DEIR). However, as discussed in Section 5.4, Biological Resources, these trees are not locally or regionally unique and they do not provide visual resources. The Specific Plan provides a landscape design guidelines that would provide quality visual character to the project site. Therefore, visual impacts of removing trees would not be considered significant impact.

The project site is not visible from any officially designated or eligible state scenic highways, and the proposed project does not contain any scenic resources, including but not limited to trees, rock outcroppings, and historic buildings. Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.1-3: The project site is in an urbanized area, and the proposed project would not conflict with applicable zoning and other regulations governing scenic quality. [Threshold AE-3]

The project site is located in an urbanized area within the City of Brea and its SOI. The project site is currently zoned HR (Hillside Residential) east of Valencia Avenue and R-1 (Single Family Residential) west of Valencia Avenue and Rose Drive. As part of the proposed project, the project site would be rezoned to Brea 265 Specific Plan. Future development in the Specific Plan area would be consistent with the design guidelines and development regulations and standards outlined in the Brea 265 Specific Plan. The proposed project includes the development of 1,100 dwelling units of low density residential (LDR) (450 dwelling units) and medium density residential (MDR) (650 dwelling units). The proposed project would also include approximately 47.5 acres of open space and 15.1 acres of parks and recreation area throughout the site.

In Chapter 3, Figure 3-4, *Brea 265 Land Use Plan*, shows the general locations of each of the uses. The MDR with 6.1 to 12.0 dwelling units per acre would be allowed on the southern end of the project site near the intersection of Rose Drive and Vesuvius Drive and on the western side of the project site south of Lambert Road. The LDR with 1.0 to 6.0 dwelling units per acre would be provided on the west side of Valencia Avenue north of Lambert Road and the area east of Valencia Avenue and Rose Drive north of Vesuvius Avenue. Brea 265 proposes seven residential product types with maximum height ranging from 40 feet to 50 feet above grade depending on the product type as listed below. In MDR, all seven residential product types are permitted and in LDR, all product types except attached motorcourt homes and apartment homes are permitted.

- Conventional Single Family Detached Homes – 40 feet above grade (3 stories)
- Front Loaded Zero-Lot Line Homes – 45 feet above grade (3 stories)

- Rear Loaded Homes – 45 feet above grade (3 stories)
- Detached Cluster Homes – 45 feet above grade (3 stories)
- Row Townhomes – 50 feet above grade (3 stories)
- Attached Motorcourt Homes – 50 feet above grade (3 stories)
- Apartment Homes – 45 feet above grade (3 stories)

While the proposed project would rezone the project site, the proposed project would not conflict with the intent of the Hillside Development Ordinance although some deviations have been made as allowed by the Affordable Housing Incentives. The architectural design guidelines would provide framework for high quality design consistently throughout the project site.

The proposed project would modify the character of the project site from oil-related uses, agricultural uses, and open space to a largely residential development. Although on-site visual character would change, the surrounding areas are developed with single-family residential, multifamily residential, and parks (to the east of the project site). The proposed project would incorporate attached residential product types—row townhomes, attached motorcourt homes, and apartment homes that would be visually similar to existing multifamily housing in the Brea community, such as the multifamily development north of the project site on Santa Fe Road. The proposed project's detached residential product types would be similar to existing single-family neighborhoods surrounding the project site. Single-family detached neighborhoods exist adjacent to the project site to the south, west, and north. Three-story condominium development exists along Rose Drive across from the project site. The proposed project would not substantially conflict with the visual character of the surrounding area.

The proposed project is not located within the Carbon Canyon and Olinda Village focus area nor the Hillsides and Unincorporated Brea focus area. Development on the project site would not conflict with the goals or policies outlined for these focus areas.

The southern portion of the project site, within the City of Brea, is within the Southeast Brea focus area. The General Plan describes Southeast Brea as containing oil-use-related (including the Unocal Research Center) and agricultural properties that are expected to transition over time to other uses. According to Goal CD-9, the objective for this focus area is to "[c]reate a dynamic, mixed-use urban village that integrates a range of housing types (including senior housing), moderate-intensity commercial uses, educational and public uses, and parks." The community design element identifies eight policies (CD-9.1 through CD-9.8; see Section 5.1.1.1) to accomplish this goal.

The proposed project would develop single-family detached residences, single-family attached residences, parks and open space along the perimeter of the site, and the recreational commercial use on the portion of the project site within the Southeast Brea focus area. Consistent with Goal CD-9.1, the proposed project created a mixed-use environment that integrates a range of housing types, commercial use, open space, and parks.

The proposed recreational commercial use would accommodate commercial uses that specifically provide a recreational or leisure focus that supports agricultural and recreational uses in the Specific Plan area. This recreational use would be reminiscent of the project site's agricultural history and provide space for farmers markets, dining opportunities, event space, and other retail/agricultural-based uses. This recreational

commercial use would complement the existing and proposed community with community-oriented activities and would not compete with existing commercial uses.

Consistent with Policy CD-9.2 through CD-9.6, the proposed project would accommodate a variety of housing options; within the Southeast Brea focus area, the proposed project provides single-family attached and detached opportunities. The project site, including the portion within the Southeast Brea area, connects the community with open space, parks, and walking paths. The development of the Specific Plan would also include a variety of amenities throughout the project site. The recreational commercial element of the proposed project would serve as a place of gathering and further connect the proposed project residents with the surrounding community. The proposed project further incorporates approximately 45 acres of open space and 20.9 acres of parks/recreational space on site. Open space and parks/recreational space would occur throughout the project site. Approximately 15.5 acres of open space would run along the project site's eastern border adjacent to Carbon Canyon Regional Park and open space.

Consistent with Policy CD-9.6 and Policy CD-9.7, the proposed project is a master-planned community that would create a cohesive community visually similar to surrounding communities. Upon approval of the proposed project, the unincorporated county area would be annexed into the City of Brea, thus eliminating an existing county island.

Based on the discussion under this impact (Impact 5.1-3), the proposed project would not conflict with existing zoning and other regulations governing scenic quality with the approval of the discretionary actions. The proposed project would result in a less than significant impact.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.1-4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. [Threshold AE-4]

Lighting effects are associated with the evening and nighttime use of artificial light. Excessive light and/or glare can impair vision, cause annoyance, affect sleep patterns, and generate safety hazards when experienced by drivers. Residences and natural outdoor spaces are considered light sensitive since occupants have expectations of privacy during evening hours and may be subject to disturbance by bright light sources, and wildlife's natural movements and activities can be disrupted. Light spill is typically defined as the presence of unwanted light on properties adjacent to the property being illuminated. With respect to lighting, the degree of illumination can vary widely depending on the amount of light generated, height of the light source, presence of barriers or obstructions, type of light source, and weather conditions.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light on surfaces that reflect the light, such as highly polished surfaces (e.g., glass, automobiles, and reflective materials) and light-colored surfaces (e.g., surfaces of buildings and structures). Perceived glare is the unwanted and potentially objectionable sensation experienced by a person as they look directly into the light source of a luminaire. Daytime glare generation is common in urban areas, typically associated with buildings whose exterior façades are largely or entirely composed of highly reflective glass. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Daytime glare can

also be generated by light reflecting off passing or parked cars. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the day and year. Excessive glare not only impedes visibility, but also increases the ambient heat reflectivity in a given area. The adjacent residences are glare-sensitive uses.

The project site currently contains minimal sources of light and glare due to the project site being largely undeveloped. Scattered oil wells and associated facilities occur throughout the northern portion of the project site and generate negligible sources of light and glare. The project site is generally unlit except for nighttime lighting associated with the uses on-site, such as security lighting.

Existing light and glare sources in the surrounding area around the project site include typical residential lighting (such as light emanating from windows, outdoor lighting on private property, and security lighting), street lights, outdoor lighting in park areas (such as the basketball courts in Olinda Ranch Neighborhood Park), and security lighting and parking lot lighting associated with the commercial uses to the west of the project site. Existing glare sources include vehicles traveling along public rights-of-way adjacent to the project site and light-colored building material used in the adjacent residential developments.

The following is a discussion of the potential nighttime and daytime light and glare impacts associated with the proposed project.

Nighttime Light and Glare

The proposed project would develop 1,100 dwelling units and a recreational commercial use on a 260-acre site. The project site is bordered by residential uses and open space to the north; residential uses, Olinda Elementary School, and Brea Sports Park to the west; residential uses to the south; and open space and Carbon Canyon Regional Park to the east.

As shown in Figure 3-3, *Aerial Photograph*, the project site is largely undeveloped and is in an urbanized area of Brea, with residential, commercial, educational, and recreational uses in the vicinity of the project site.

The proposed project would include interior and exterior lighting. The proposed project exterior lighting would illuminate outdoor parking areas, common gathering spaces, rights-of-way, and the parks. Minimal decorative lighting would also light landscaping and architectural features. Nighttime lighting and glare introduced by the proposed project would be visible to the surrounding residents and neighboring parks from various vantage points and roadways.

Although the proposed project would introduce new light sources to the project site and surrounding area, the proposed light sources would be similar to the light sources of the surrounding residential uses and roadways. Considering the existing sources of lighting in the surrounding vicinity, the amount and intensity of nighttime lighting proposed on-site would not adversely impact the nighttime or daytime views in the area.

Further, with the implementation of PPP AE-1, the proposed project would comply with Municipal Code Chapter 20.206, Hillside Residential Zone. In accordance with Section 20.206.210(A), Other Regulations, Exterior Lighting, exterior lighting would be properly shielded to avoid glare and the spill of light to surrounding areas. Low-level lighting and multiple low-profile fixtures would be used, as opposed to the use of

fewer but taller fixtures. The proposed project would be designed so that emphasis on exterior lighting is on safety and landscaping lighting as opposed to building lighting.

As described in the design guidelines for Brea 265, the proposed project would reduce the use of energy-intensive or artificial interior lighting by maximizing skylights and other natural lighting and equip lighting systems with motion detectors so that lights are turned off when not necessary. Additionally, the proposed project would use high-efficiency lighting such as LED where possible.

The proposed project would further be required to comply with California Building Energy Efficiency Standards for Residential Buildings (California Code of Regulations, Title 24, Part 6), which outlines mandatory provisions for lighting control devices and luminaires. Compliance with lighting provisions of the Brea Municipal Code and Title 24 would ensure that the proposed project would not result in significant light impacts. Therefore, nighttime light and glare impacts related to the proposed project would be less than significant.

Daytime Glare

The proposed project would not include highly reflective building materials or architectural treatments that could cause substantial daytime glare. The development of the proposed project would produce glare sources that are typical of residential buildings and communities, such as building material (glass and light-colored building materials), plexiglass fences, and vehicles parked and traveling along neighboring streets. However, glare from these sources is typical of the surrounding area and would not increase glare beyond what is expected for a residential development. Therefore, daytime glare impacts from the proposed project would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

5.1.5 Cumulative Impacts

Scenic Views

The geographical area considered for cumulative analysis is the City of Brea and the vicinity encompassing the cumulative projects identified in Table 4-1, *Related Cumulative Projects*. As discussed in Impact 5.1-1, the proposed project would not result in significant impacts to scenic views. And it is anticipated that other cumulative projects as listed in Table 4-1, *Related Cumulative Projects*, would also be designed in compliance with applicable general plan policies and community design guidelines to protect scenic vistas. Therefore, the proposed project and related cumulative projects would not combine to impair scenic views from Brea Boulevard/Brea Canyon Road, Carbon Canyon Road, or SR-57. The proposed project's cumulative impacts on scenic views would not be considered cumulatively significant.

Visual Character

Similar to the proposed project, all related projects would be required to show consistency with applicable City development and design plans, such as the General Plan and its community development and community resources elements. Furthermore, the parcels adjacent to and surrounding the project site are largely built out

or are designated park and open space. Should new development be proposed adjacent to the site, such development would be subject to adopted plans and regulations that are in place to preserve a community's visual character. Based on the distance of the related projects to the proposed project and the proposed project's consistency with applicable plans and regulations, the proposed project's contribution to cumulative aesthetics impacts would be less than cumulatively considerable, and therefore less than cumulatively significant.

Light and Glare

Due to the developed nature of the project site area and the presence of light and glare from adjacent properties and from vehicles along adjacent roadways, the proposed project is not anticipated to add significantly to the creation of light or glare. Additionally, the proposed project would implement PPP AE-1 and comply with Municipal Code Chapter 20.206, Hillside Residential Zone, which outlines requirements for exterior lighting. The project applicant would further present descriptions of exterior lighting in the design guideline manual required by Section 20.206.050 of the Municipal Code. No related projects are immediately adjacent of the project site. One related project, La Floresta (Related Project #1), is approximately 0.5 mile southwest from the project site. The combination of the proposed project and the La Floresta project is expected to increase lighting and glare in the vicinity of the project site. However, similar to the proposed project, the La Floresta project is expected to comply with required measures to minimize light and glare impacts, such as Title 24. Therefore, cumulative light and glare impacts would be less than significant.

5.1.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.1-1, 5.1-2, 5.1-3, and 5.1-4.

5.1.7 Mitigation Measures

No mitigation measures are required.

5.1.8 Level of Significance After Mitigation

Aesthetic impacts have been determined less than significant without mitigation. The proposed project would not have significant, unavoidable, adverse impacts to environmental aesthetics.

5.1.9 References

Alta California Geotechnical Inc. (Alta). 2018. EIR-Level Geotechnical Assessment: Brea Central Property, City of Brea, County of Orange, California.

Brea, City of. 2003. *Imagine Brea: General Plan*.

Cadre Environmental. 2019. Biological Resources Technical Report: Brea 265 Specific Plan City of Brea, Orange County, California.

California Department of Transportation (Caltrans). 2022. List of Eligible and Officially Designated State Scenic Highways. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

5. Environmental Analysis
AESTHETICS

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5.2 AGRICULTURE AND FORESTRY RESOURCES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed project to impact agriculture and forestry resources in the City of Brea and its sphere of influence (SOI).

5.2.1 Environmental Setting

5.2.1.1 REGULATORY BACKGROUND

Farmland Mapping and Monitoring Program

The California Department of Conservation classifies agricultural land through the Farmland Mapping and Monitoring Program (FMMP) of the Division of Land Resource Protection. The FMMP was established in 1982 in response to a critical need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time. FMMP is a nonregulatory program and provides a consistent and impartial analysis of agricultural land and land use changes throughout California. FMMP produces Important Farmland Maps, which are a hybrid of resource quality (soils) and land use information. Data is also released in statistical formats that are compiled within the biennial California Farmland Conversion Report. The latest mapping date for the Orange County FMMP is 2016.

Prime Farmland. Prime farmland has the best combination of physical and chemical features and is able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance. Farmland of statewide importance is similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland. Unique farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Grazing Land. Grazing land is land on which the existing vegetation is suited to the grazing of livestock.

Urban and Built-Up Land. Urban and built-up land is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.

Other Land. Other land is land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40

acres. More than 40 acres of vacant and nonagricultural land surrounded on all sides by urban development is mapped as "other land."

Water. Perennial water bodies with an extent of at least 40 acres.

Williamson Act Program

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses, not the full market value of the land.

The Department of Conservation assists all levels of government and landowners in the interpretation of the Williamson Act. The department also researches, publishes, and disseminates information regarding the policies, purposes, procedures, and administration of the Williamson Act. Participating counties and cities are required to establish their own rules and regulations regarding implementation of the act in their jurisdiction. These rules include but are not limited to enrollment guidelines, acreage minimums, enforcement procedures, allowable uses, and compatible uses.

City of Brea General Plan

Community Development Element

According to the City of Brea General Plan Community Development Element, Brea's incorporated city limits, as of 2002, encompassed approximately 7,000 acres or 11 square miles. The community displays a balanced, complementary mix of residential neighborhoods of various housing types and densities, local and large-scale regional commercial businesses and centers, modern industrial uses in business park settings, schools, and public parks. Within the incorporated city limits of Brea, approximately 1 percent of land is under agriculture land use, and these properties are expected to eventually transition to other uses.

Community Resources Element

Goal CR-5: Provide a flexible and balanced open space and conservation plan.

- **Policy CR-5.3.** Develop and maintain strong relationships with local and regional environmental and conservation organizations.

County of Orange General Plan

Resources Element: Natural Resources Component

- **Policy 2, Agriculture.** To encourage to the extent feasible the preservation and utilization of agricultural resources as a natural resource and economic asset.
    - **Implementation Program 2:** Agricultural Preservation Program.

- **Action.** Evaluate the establishment of an Agricultural Preservation Program to mitigate the long-term impact of agricultural preserve contract cancellations and to provide economic and technical assistance to County agricultural activities. Specifically, the program would establish a trust which could be used for grants, loans, research, and other appropriate items related to agricultural resources. The trust would be funded by contributions from agricultural preserve contract cancellation proponents.

Local Agency Formation Commission Guidelines

The provisions of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 set procedures for Local Agency Formation Commissions, or LAFCOs, throughout the state to review annexation applications. The act was adopted to:

- Encourage orderly development.
- Ensure that populations receive efficient and quality governmental services.
- Guide development away from open space and prime agricultural lands unless such action promotes planned, orderly, and efficient development

5.2.1.2 EXISTING CONDITIONS

Agricultural Uses

The project site contains 12.21 acres of prime farmland, 10.99 acres of farmland of statewide importance, and 16.45 acres of unique farmland, a total of 39.65 acres of special status farmland. Approximately 27.79 acres of this farmland are currently being used for agriculture. The existing nursery use (4.61 acres) is north of Lambert Road in grazing land. Figure 5.2-1, *Important Farmland Location Map*, illustrates important farmlands in the project site. Table 5.2-1 shows existing farmland types and acreage in the project site.

Table 5.2-1 Project Site Farmland Type

Farmland Type	Acreage
Prime Farmland	12.21 acres
Farmland of Statewide Importance	10.99 acres
Unique farmland	16.45 acres
Urban and built-up land	4.07 acres
Grazing land	97.36 acres
Other land	126.50 acres
Total	**267.58 acres**

Source: ESRI 2018.

Land Use Designations

The project site falls into Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Grazing Land. The project site is designated Hillside Residential and Low Density Residential by the Brea

General Plan, and zoned HR Hillside Residential and R-1 Single-family residential. The project site does not include any properties under a Williamson Act contract.

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:

AG-1 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.

AG-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract.

AG-3 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)).

AG-4 Result in the loss of forest land or conversion of forest land to non-forest use.

AG-5 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.

5.2.3 Plans, Programs, and Policies

There are no applicable plans, programs, and policies related to the proposed project.

5.2.4 Environmental Impacts

5.2.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance. The applicable thresholds are identified in brackets after the impact statement.

Figure 5.2-1 - Important Farmland Location Map
5. Environmental Analysis



0 1,000
Scale (Feet)

Source: ESRI, 2019

5. Environmental Analysis
AGRICULTURE AND FORESTRY RESOURCES

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Impact 5.2-1: The proposed project would convert Prime Farmland, Unique Farmland, and Farmland of Statewide Importance—as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency—to nonagricultural use. [Threshold AG-1]

The project site contains farmland identified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (Farmland) totaling 39.65 acres. Of the 39.65 acres of Farmland, 27.79 acres are being used for agricultural purposes, and other areas include annual brome grassland, roads and pads, filaree fields, and upland mustards. Implementation of the proposed project would convert all of the Farmland and existing agricultural uses to nonagricultural use. However, the City of Brea General Plan designates this area Hillside Residential in the land use map, and it is zoned HR Hillside Residential. Therefore, conversion of agricultural use to nonagricultural use was already planned and approved by the City—the City already expected agricultural properties to transition to other uses over time. The General Plan identifies 1 percent of the City's planning area as agriculture use and does not provide any goals or policies protecting agricultural uses. Impacts would be considered less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.2-2: The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. [Threshold AG-2]

The project site is currently zoned R-1 Single-Family Residential and HR Hillside Residential; it is not zoned for agricultural use or subject to Williamson Act contract. Conversion of the project site to Brea 265 Specific Plan would not conflict with existing zoning for agricultural use. No impact is anticipated.

Level of Significance Before Mitigation: No impact.

Impact 5.2-3: The proposed project would not 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)), and would not result in the loss of forest land or conversion of forest land to nonforest use. [Thresholds AG-3 and AG-4]

The Public Resources Code (PRC Section 12220) defines forest land as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. PRC Section 4526 defines timberland as land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for and capable of growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees.

The project site is currently zoned R-1 Single-Family Residential and HR Hillside Residential. There is no forest land or timberland in the project site (GLA 2018). Therefore, implementation of the proposed project

would not cause rezoning of forest land or timberland, and would not result in the loss of forest land or conversion of forest land to nonforest use. No impact is anticipated.

Level of Significance Before Mitigation: No impact.

Impact 5.2-4: The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use. [Threshold AG-5]

The project site is currently zoned R-1 Single-Family Residential and HR Hillside Residential; it is not zoned for agricultural use or subject to a Williamson Act contract. Conversion of the project site to Brea 265 Specific Plan would not conflict with existing zoning for agricultural use. No impact is anticipated.

Level of Significance Before Mitigation: No impact.

5.2.5 Cumulative Impacts

The area considered for cumulative impacts for this project is the County of Orange. Although Orange County was once a rural county supported primarily by an agricultural economy, agriculture steadily declined over the years and no longer has a significant presence in the county. The decline can be attributed to urban growth, rising cost of irrigation water, agricultural land tax rates, labor costs, etc. that led to increased production costs, making it economically unsustainable. The project site is currently zoned R-1 Single-Family Residential and HR Hillside Residential by the City of Brea, indicating that the project site is already planned and approved for nonagricultural uses. Although the proposed project would result in the loss of 39.65 acres of Farmland, 27.79 acres of which are currently being used for agricultural purposes, transitioning of these lands to nonagricultural uses has already been planned and approved by the City. Without the proposed project, the project site would still be developed with nonagricultural uses. Therefore, the proposed project would individually have a less than significant agricultural and forestry resources impact without mitigation. When combined with other cumulative development projects, the proposed project would contribute to overall decline of agricultural lands in the county. However, because the project site is not held in agricultural preserve and the County and the City planned for residential uses, cumulative impacts of the proposed project would be considered less than significant.

5.2.6 Level of Significance Before Mitigation

The following impacts would be less than significant: 5.2-1, 5.2-2, 5.2-3, and 5.2-4.

5.2.7 Mitigation Measures

No mitigation measures are required.

5.2.8 Level of Significance After Mitigation

No significant unavoidable adverse impacts to agricultural resources have been identified.

5.2.9 References

Brea, City of. 2003, August 19 (adopted). General Plan.
https://www.ci.brea.ca.us/DocumentCenter/View/61/General-Plan?bidId=.

California Department of Conservation (DOC). California Important Farmland Finder.
https://maps.conservation.ca.gov/DLRP/CIFF/.

Orange, County of. County of Orange General Plan, Resources Element.
https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=40235.

5. Environmental Analysis
AGRICULTURE AND FORESTRY RESOURCES

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5.3 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Brea 265 Specific Plan (proposed project) to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling for the proposed project is included in Appendix C of this DEIR. Transportation-sector impacts are based on trip generation as provided by Linscott, Law & Greenspan, Engineers (LLG) (see Appendix N). Cumulative impacts related to air quality are based on the regional boundaries of the South Coast Air Basin (SoCAB).

Terminology

The following are definitions for terms used throughout this section.

- **AAQS:** Ambient Air Quality Standards
- **CES:** CalEnviroScreen. CES is a mapping tool the helps identify the California communities most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects.
- **Concentrations:** Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).
- **Criteria Air Pollutants:** Those air pollutants specifically identified for control under the Federal Clean Air Act (currently six: carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone and particulates).
- **DPM:** Diesel particulate matter
- **Emissions:** Refers to the actual quantity of pollutant, measured in pounds per day or tons per year.
- **ppm:** Parts per million
- **Sensitive receptor:** Land uses that are considered more sensitive to air pollution compared to others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- **TAC:** Toxic air contaminant
- **$\mu g/m^3$:** Micrograms per cubic meter
- **VMT:** Vehicle miles traveled

5.3.1 Environmental Setting

5.3.1.1 REGULATORY BACKGROUND

Ambient air quality standards have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of TACs. The proposed project is in the SoCAB and is subject to the rules and regulations imposed by the South Coast AQMD as well as the California AAQS adopted by California Air Resources Board (CARB) and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

Federal and State

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 5.3-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and 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. California ambient air quality standards 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, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three 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 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- **Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards.** 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. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.

- **Heavy-Duty (Tractor-Trailer) GHG Regulation.** The tractors and trailers subject to this regulation must either use EPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified

low-rolling-resistance tires. There are also requirements for trailers to have low-rolling-resistance tires and aerodynamic devices

- **SB 1078 and SB 107: Renewables Portfolio Standards.** A major component of California's Renewable Energy Program is the renewables portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.

- **California Code of Regulations (CCR), Title 20: Appliance Energy Efficiency Standards.** The 2006 Appliance Efficiency Regulations (20 CCR secs. 1601–1608) were adopted by the California Energy Commission (CEC) on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances.

- **24 CCR, Part 6: Building and Energy Efficiency Standards.** Energy conservation standards for new residential and non-residential buildings adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977.

- **24 CCR, Part 11: Green Building Standards Code.** Establishes 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.[1]

Tanner Air Toxics Act and Air Toxics Hots Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR sec. 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code sec. 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To

[1] The green building standards became mandatory in the 2010 edition of the code.

date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10 Section 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.** Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.

- **13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.** Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.

- **13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.** Regulations established to control emissions associated with diesel-powered TRUs.

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and its known health effects is presented below.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation

(South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2022a).

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2022a). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment.[2] The remainder of the SoCAB is designated an attainment (maintenance) under the National AAQS and attainment area under the California AAQS (CARB 2022a).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated attainment under the California and National AAQS (CARB 2022a).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse

[2] CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2022b).

particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[3] environmental damage,[4] and aesthetic damage[5] (South Coast AQMD 2005; USEPA 2022a). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2022a).[6]

- **Ozone**, or O_3, is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (South Coast AQMD 2005; USEPA 2022a). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2022a).

[3] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[4] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[5] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[6] CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (South Coast AQMD 2005). There are no AAQS for VOCs, meaning that no health-based criteria established by the EPA or CARB. However, because they contribute to the formation of O_3, South Coast AQMD has established a significance threshold. The health effects for ozone, which VOC contributes to the formation of, are described above.

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; USEPA 2018). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[7] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2022a). There are no lead-emitting sources associated with this project, and therefore, lead is not a pollutant of concern for the proposed project.

Table 5.3-2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

[7] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (South Coast AQMD 2012).

Table 5.3-2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	• Increased response to allergens • Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} & $PM_{2.5}$)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	• Aggravation of respiratory disease (e.g., asthma and emphysema) • Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	• Behavioral and learning disabilities in children • Nervous system impairment	Contaminated soil

Source: CARB 2022b.

Toxic Air Contaminants

People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems (USEPA 2022b). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the project being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. Long-term (chronic) inhalation of DPM is likely a lung cancer risk. Short-term (i.e., acute) exposure can cause irritation and inflammatory systems and may exacerbate existing allergies and asthma systems (USEPA 2002).

Air Quality Management Planning

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and assuring that the National and California AAQS are attained and maintained. It is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, South Coast AQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031
- 2012 National annual $PM_{2.5}$ standard by 2025[8]
- 2006 National 24-hour $PM_{2.5}$ standard by 2019
- 1997 National 8-hour ozone standard by 2023
- 1979 National 1-hour ozone standard by year 2022

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (South Coast AQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, because the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, South Coast AQMD sought to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment required meeting the 2012 federal standard by no later than 2021.

The 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. The 2016 AQMP includes 15 measures to reduce mobile source emissions. These measures include identifying actions to mitigate and reduce emissions associated with new development and redevelopment projects, to reduce facility-based (i.e., commercial marine ports, rail yards and intermodal facilities, warehouse and distribution centers, and commercial airports in addition to new and redevelopment projects), on-road, and off-road mobile sources of emissions, and also to identify the benefits of incentive programs in reducing emissions. Overall, strategies outlined in the 2016 AQMP are implemented in collaboration between CARB and the EPA (South Coast AQMD 2017).

[8] The 2016 AQMP requests a reclassification from moderate to serious nonattainment for the 2012 National $PM_{2.5}$ standard.

2022 AQMP

On October 1, 2015, the EPA strengthened the National AAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb). The SoCAB is classified as an "extreme" nonattainment area, and the Coachella Valley is classified as a "severe-15" nonattainment area for the 2015 Ozone National AAQS. South Coast AQMD is updating the AQMP to address the requirements for meeting this standard.

South Coast AQMD $PM_{2.5}$ Redesignation Request and Maintenance Plan

In 1997, the EPA adopted the 24-hour fine $PM_{2.5}$ standard of 65 micrograms per cubic meter ($\mu g/m^3$). In 2006, this standard was lowered to a more health-protective level of 35 $\mu g/m^3$. The SoCAB is designated nonattainment for both the 65 and 35 $\mu g/m^3$ 24-hour $PM_{2.5}$ standards (24-hour $PM_{2.5}$ standards). In 2020, monitored data demonstrated that the SoCAB attained both 24-hour $PM_{2.5}$ standards. The South Coast AQMD has developed the "2021 Redesignation Request and Maintenance Plan" for the 1997 and 2006 24-hour $PM_{2.5}$ Standards for the SoCAB $PM_{2.5}$ Redesignation Request, demonstrating that the SoCAB has met the requirements to be redesignated to attainment for the 24-hour $PM_{2.5}$ standards (South Coast AQMD 2021a).

AB 617, Community Air Protection Program

AB 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities that are disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018 CARB prepared an air monitoring plan (Community Air Protection Blueprint) that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology; adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

Lead Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of

Industry that exceeded the new standard in the 2007-to-2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

South Coast AQMD Rules and Regulations

All projects are subject to South Coast AQMD rules and regulations in effect at the time of activity, including:

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities. In general, the rule prohibits new developments from the installation of wood-burning devices.

- **Rule 445, Wood Burning Devices.** This rule is intended to reduce the emission of particulate matter from wood-burning devices and applies to manufacturers and sellers of wood-burning devices, commercial sellers of firewood, and property owners and tenants that operate a wood-burning device.

- **Rule 1113, Architectural Coatings.** This rule serves to limit the VOC content of architectural coatings used on projects in the South Coast AQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the South Coast AQMD must comply with the current VOC standards set in this rule.

- **Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.** The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and

renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

5.3.1.2 EXISTING CONDITIONS

South Coast Air Basin

The project site is in the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (South Coast AQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The lowest average mean temperature for Brea is 54.6°F in December, and the highest average temperature is 75.7°Fahrenheit (°F) in August (USA.com 2022). Overall mean average temperature for the city is 65.6°F (USA.com 2022).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Rainfall historically averages 19.06 inches per year in the city (USA.com 2022).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (South Coast AQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (South Coast AQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project site (South Coast AQMD 2005).

SoCAB Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- ***Unclassified.*** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- ***Attainment.*** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- ***Nonattainment.*** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- ***Nonattainment/Transitional.*** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.3-3, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

Table 5.3-3 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment[2]
CO	Attainment	Attainment
NO_2	Nonattainment (SR-60 Near Road only)[1]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2022a.

[1] On February 21, 2019, CARB's Board approved the separation of the area that runs along State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for State nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO_2 (CARB 2019). CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2022c).

[2] The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal $PM_{2.5}$ standards. The *2021* $PM_{2.5}$ *Redesignation Request and Maintenance Plan* demonstrates that the South Coast meets the requirements of the CAA to allow US EPA to redesignate the SoCAB to attainment for the 65 µg/m^3 and 35 µg/m^3 24-hour $PM_{2.5}$ standards. CARB will submit the 2021 $PM_{2.5}$ Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021a).

[3] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

Multiple Air Toxics Exposure Study V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. DPM continues to be the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of

carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021a).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the South Coast AQMD. The proposed project is in Source Receptor Area (SRA) 16: North Orange County.[9] The air quality monitoring station closest to the project site is the La Habra Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.[10] This station provides NO_2 and one- and eight-hour O_3 data. Data for PM_{10} and $PM_{2.5}$ is supplemented from the Anaheim-Pampas Lane Monitoring Station. The data from these stations are summarized in Table 5.3-4, *Ambient Air Quality Monitoring Summary*. As shown in the table, the area regularly exceeds the state and federal one-hour and eight-hour O_3 standards within the last five recorded years. Additionally, the area has regularly exceeded the state PM_{10} and federal $PM_{2.5}$ standards.

Table 5.3-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels				
	2016	2017	2018	2019	2020
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	3	5	3	4	15
State 8-hour ≥ 0.07 ppm (days exceed threshold)	7	12	4	6	23
Federal 8-Hour > 0.075 ppm (days exceed threshold)[2]	3	8	3	3	19
Max. 1-Hour Conc. (ppm)	0.103	0.113	0.111	0.107	0.171
Max. 8-Hour Conc. (ppm)	0.078	0.086	0.077	0.095	0.114
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.060	0.076	0.067	0.0594	0.0572
Coarse Particulates (PM_{10})[3]					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	3	5	2	4	5
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	74.0	95.7	94.6	127.6	74.8
Fine Particulates ($PM_{2.5}$)[3]					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	7	7	4	12
Max. 24-Hour Conc. (µg/m^3)	44.4	53.9	63.1	36.1	60.2

Source: CARB 2021b.
Notes: ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter
* Data not available.
1 Data obtained from the La Habra Monitoring Station.
2 On October 1, 2015 the EPA adopted a new 8-hour National ambient air quality standards (AAQS) for ozone of 0.070 ppm (70 ppb).
3 Data obtained from the Anaheim-Pampas Lane Monitoring Station.

[9] Per South Coast AQMD Rule 701, an SRA is defined as follows: "A source area is that area in which contaminants are discharged and a receptor area is that area in which the contaminants accumulate and are measured. Any of the areas can be a source area, a receptor area, or both a source and receptor area". There are 37 SRAs within the South Coast AQMD's jurisdiction.

[10] Locations of the SRAs and monitoring stations are shown here: http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.

Air Quality Improvement Trends in the Air Basin

South Coast AQMD rule development through the 1970s and 1980s resulted in dramatic improvement in SoCAB air quality. Nearly all control programs developed through the early 1990s relied on (1) the development and application of cleaner technology; (2) add-on emission controls, and (3) uniform CEQA review throughout the SoCAB. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB.

Criteria Air Pollutant Trends

As discussed above, the South Coast AQMD is the lead agency charged with regulating air quality emission reductions for the entire SoCAB. South Coast AQMD created AQMPs, which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the SoCAB. The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970s is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs," (South Coast AQMD 2012). Ozone, NO_X, VOC, and CO have been decreasing in the SoCAB since 1975 and were projected to continue to decrease through 2020 (CARB 2009; CARB 2013).[11] These decreases result primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled in the SoCAB continue to increase, NO_X and VOC levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_X emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. Ozone contour maps show that the number of days exceeding the national 8-hour standard has decreased between 1997 and 2007. The overall trends of PM_{10} and $PM_{2.5}$ in the air (not emissions) show an overall improvement since 1975. Direct emissions of PM_{10} have remained somewhat constant in the SoCAB, and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. Area-wide sources (fugitive dust from roads, dust from construction and demolition, and other sources) contribute most of direct particulate matter emissions.

Toxic Air Contaminants Trends

In 1984, as a result of public concern for exposure to airborne carcinogens, the CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile and area sources, such as cars, trucks, stationary products, and consumer products. According to the "Ambient and Emission Trends of Toxic Air Contaminants in California" article was prepared for CARB, results show that between 1990 and 2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly (Propper et al. 2015). The decline in ambient concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk.[12]

Existing Emissions

The project site has been used for oil production continuously since the early 1900s. Of the approximately 190 wells drilled on the site, 110 remain in operation and produce approximately 500 barrels per day. Current

[11] See Appendix C5 of this DEIR for further details.
[12] See Appendix C5 of this DEIR for further details.

emissions generated from the existing operations are associated with any operations-related vehicle trips made to and from the project site and from related equipment.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution (i.e., toxic air contaminants) than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

The project site is generally bordered by residential uses to the west, north, and south with single family residences further to the east. Other nearby sensitive uses include Olinda Elementary School along East Birch Street adjacent to the southwest corner of the site's Phase 2 development area, and North Hills Preschool also along East Birch Street further to the southwest.

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:

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.

5.3.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* (Handbook) and the significance

thresholds on South Coast AQMD's website (South Coast AQMD 1993).[13] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. South Coast AQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation based on substantial evidence.

Regional Significance Thresholds

South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB, shown in Table 5.3-5, *South Coast AQMD Regional Significance Thresholds*. The table lists thresholds that are applicable for all projects uniformly, regardless of size or scope. There is growing evidence that although ultrafine particulate matter contributes a very small portion of the overall atmospheric mass concentration, it represents a greater proportion of the health risk from PM. However, the EPA and CARB have not adopted AAQS to regulate ultrafine particulate matter; therefore, South Coast AQMD has not developed thresholds for them.

Table 5.3-5 South Coast AQMD Regional Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: South Coast AQMD 2019.

Health Outcomes Associated with the Regional Significance Thresholds

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health effects. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Increases cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)

[13] The South Coast AQMD is currently in the process developing an "Air Quality Analysis Guidance Handbook" to replace its CEQA Air Quality Handbook. While the new handbook is being prepared, South Coast AQMD has made available supplemental information and guidance including updated significance thresholds, of which this analysis utilizes. The South Coast AQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Contributes to lower birth weight in newborns ($PM_{2.5}$) (South Coast AQMD 2000)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists, in a landmark children's health study, found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (South Coast AQMD 2015).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions in Table 5.3-5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact. The South Coast AQMD CEQA significance thresholds in Table 5.3-5 are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health of sensitive populations such as asthmatics, children, and the elderly. Therefore, projects that do not exceed the South Coast AQMD regional significance thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 5.3-5, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 5.3-5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above.

The South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.)* (2018) 6 Cal.5th 502, Case No. S21978 (Friant Ranch). Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding

the significance thresholds. However, if a project within the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the SoCAB.

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. With the turnover of older vehicles and introduction of cleaner fuels, as well as implementation of control technology on industrial facilities, CO concentrations in the SoCAB and the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[14] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in years before redesignation were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).[15]

Localized Significance Thresholds

The South Coast AQMD identifies localized significance thresholds, shown in Table 5.3-6, *South Coast AQMD Localized Significance Thresholds*. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (off-site mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would generate a significant impact.

[14] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

[15] The CO hotspot analysis refers to the modeling conducted by the Bay Area Air Quality Management District for its CEQA Guidelines because it is based on newer data and considers the improvement in mobile-source CO emissions. Although meteorological conditions in the Bay Area differ from those in the Southern California region, the modeling conducted by BAAQMD demonstrates that the net increase in peak hour traffic volumes at an intersection in a single hour would need to be substantial. This finding is consistent with the CO hotspot analysis South Coast AQMD prepared as part of its 2003 AQMP to provide support in seeking CO attainment for the SoCAB. Based on the analysis prepared by South Coast AQMD, no CO hotspots were predicted for the SoCAB. As noted in the preceding footnote, the analysis included some of Los Angeles' busiest intersections, with daily traffic volumes of 100,000 or more peak hour vehicle trips operating at LOS E and F.

Table 5.3-6 South Coast AQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
Annual Average PM_{10} Standard (South Coast AQMD)[1]	1.0 µg/m^3

Source: South Coast AQMD 2019.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
[1] Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, South Coast AQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated on-site that would trigger the levels shown in Table 5.3-6 for projects under five acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, they can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

The construction and operational screening-level LSTs in SRA 16 are shown in Table 5.3-7, *South Coast AQMD Screening-Level Localized Construction Significance Thresholds*. For construction activities, screening-level LSTs are based on the acreage disturbed per day based on equipment use (South Coast AQMD 2011). The different types of construction activities would require different equipment mixes, resulting in multiple LSTs.

Table 5.3-7 South Coast AQMD Screening-Level Localized Construction Significance Thresholds

	Threshold (lbs/day)[1]			
Acreage Disturbed	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
1.31 Acres Disturbed Per Day	117	597	4.62	3.31
1.81 Acres Disturbed Per Day	139	717	5.62	3.81
3.13 Acres Disturbed Per Day	175	968	7.87	4.75
3.50 Acres Disturbed Per Day	184	1,036	8.50	5.00
4.00 Acres Disturbed Per Day	196	1,128	9.33	5.33
4.50 Acres Disturbed Per Day	209	1,219	10.16	5.67
4.81 Acres Disturbed Per Day	216	1,277	10.68	5.87
5.00 Acres Disturbed Per Day	221	1,311	10.99	6.00

Source: South Coast AQMD 2008 and South Coast AQMD 2011, Based on receptors in SRA 16.
[1] Screening-level LSTs are based on receptors within 82 feet (25 meters).

Health Risk

Whenever a project would use chemical compounds identified in South Coast AQMD Rule 1401, on CARB's air toxics list pursuant to AB 1807, or on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 5.3-8, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the South Coast AQMD's TAC incremental risk thresholds for operation of a project. Projects that do not generate emissions that exceed the values in Table 5.3-8 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard.

Table 5.3-8 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: South Coast AQMD 2019

Under the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478), where a project will exacerbate an existing environmental hazard, CEQA requires an analysis of the worsened condition on future project residents and the public at large. Projects that do not generate emissions that exceed the values in Table 5.3-8 would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses (such as the hospital land uses) do not use substantial quantities of TACs and typically do not exacerbate existing hazards. Thus, these thresholds are typically applied to new industrial and warehouse projects.

5.3.2.2 MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The anticipated site remediation may include the transport of impacted soils to an off-site location outside of the South Coast AQMD jurisdictional area. For purposes of this analysis, it is assumed that any impacted soil removed off-site would be transported to a receiving location in the City of Adelanto. The primary route would take a haul truck through the SoCAB and the Mojave Desert Air Basin (MDAB), which is managed by the Mojave Desert Air Quality Management District (MDAQMD). The MDAQMD has adopted thresholds for emissions generated in the MDAB. Emissions from transport of impacted soil from remediation activities is also compared the MDAQMD CEQA thresholds (MDAQMD 2016).

Regional Significance Threshold

The MDAQMD's significance criteria are shown in Table 5.3-9, *MDAQMD Regional Significance Thresholds*. The thresholds in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

Table 5.3-9 MDAQMD Regional Significance Thresholds

Air Pollutant	Annual	Daily
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25 tons/year	137 lbs/day
Carbon Monoxide (CO)	100 tons/year	548 lbs/day
Nitrogen Oxides (NO_X)	25 tons/year	137 lbs/day
Sulfur Oxides (SO_X)	25 tons/year	137 lbs/day
Particulates (PM_{10})	15 tons/year	82 lbs/day
Particulates ($PM_{2.5}$)	15 tons/year	82 lbs/day

Source: MDAQMD 2016.
Notes:
Lead and hydrogen sulfide are not air quality pollutants of concern for most projects and are typically generated by industrial (MDAQMD permitted) projects only.
Project with phases shorter than one year, including construction activities, can be compared to the daily value.

Localized Significance Thresholds

The MDAQMD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual regional significance thresholds in Table 5.3-9 are considered to result in less than significant localized impacts.

5.3.3 Plans, Programs, and Policies

Regulatory Requirements

PPP AIR-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building Energy Efficiency Standards were effective starting on January 1, 2020, and the 2022 Building Energy Efficiency Standards will become effective January 1, 2023.

PPP AIR-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new non-residential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).

PPP AIR-3 Construction activities will be conducted in compliance with California Code of Regulations Title 13 Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

PPP AIR-4 Construction activities will be conducted in compliance with any applicable South Coast Air Quality Management District rules and regulations, including but not limited to:

- Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance.

- Rule 402, Nuisance, which states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."
- Rule 1113, which limits the volatile organic compound content of architectural coatings.

5.3.4 Environmental Impacts

5.3.4.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. South Coast AQMD has published the Handbook and updates on its website that are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs, and they were used in this analysis. The following provides a summary of the assumptions utilized for the proposed project analysis.

Operational Phase

- **Transportation.** Based on daily trip generation and vehicle miles traveled data provided by LLG (see Appendix N of this DEIR). The proposed project would generate 9,351 weekday average daily trips (ADT), 12,389 Saturday ADTs, and 10,333 Sunday ADTs at full buildout. Additionally, an average trip distance of 8.95 miles per vehicle is used based on the calculated 83,659 vehicle miles traveled per weekday for year 2035.

- **Area Sources.** Area sources generated from use of consumer products and cleaning supplies are based on CalEEMod default emission rates and on the assumed building and land use square footages. For fireplaces, it is assumed that single family detached and attached homes ((i.e. townhomes) are equipped with gas fireplaces per South Coast AQMD 445.

- **Energy.** The CalEEMod default energy rates, which are based on the 2019 Building Energy Efficiency Standards, are used to quantify criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.). Use of the CalEEMod default energy rates result in conservative estimates compared to the recently adopted 2022 Building Energy Efficiency Standards as it is anticipated new buildings building under the 2022 Standards would result in higher electricity use and lower natural gas use compared to 2019 Standards.

Construction Phase

- **Activities, Schedule, and Equipment.** Development of the proposed project is anticipated to commence in year 2023, and development would generally occur in three phases, in addition to

remediation. For purposes of this analysis, the anticipated remediation is modeled over two phases. The western remediation area is west of Valencia Avenue, and the eastern remediation area is east of Valencia Avenue. Table 5.3-10, *Construction Activities, Phasing, and Equipment*, shows the assumed construction activities and the start and end dates and equipment mix for each activity. The construction schedule used in the analysis represents a conservative scenario should construction occur any time after the respective dates, since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.

Table 5.3-10 Construction Activities, Phasing and Equipment

Activities[1]	Start/End Dates[1]	Equipment[1, 2]
Western Remediation Area		
Site Preparation	08/01/2023 to 08/08/2023	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	08/09/2023 to 08/31/2023	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Eastern Remediation Area		
Site Preparation	10/01/2024 to 10/08/2024	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/09/2024 to 10/31/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Phase 1		
Site Preparation	08/01/2023 to 10/03/2023	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/04/2023 to 02/07/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	11/20/2023 to 03/09/2024	2 excavators & 1 trencher
Fine Grading	01/06/2024 to 05/12/2024	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	03/10/2024 to 07/16/2024	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	04/12/2024 to 08/17/2024	1 tractor/loader/backhoe
Building Construction	05/13/2024 to 05/31/2025	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	01/25/2025 to 05/31/2025	1 air compressor
Phase 2		
Site Preparation	10/01/2024 to 01/06/2025	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	01/07/2025 to 07/20/2025	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	03/21/2025 to 09/07/2025	2 excavators & 1 trencher
Fine Grading	06/02/2025 to 12/15/2025	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	09/09/2025 to 03/26/2026	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	10/29/2025 to 05/13/2026	1 tractor/loader/backhoe
Building Construction	12/17/2025 to 07/31/2027	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	01/14/2027 to 07/31/2027	1 air compressor

Table 5.3-10 Construction Activities, Phasing and Equipment

Activities[1]	Start/End Dates[1]	Equipment[1, 2]
Phase 3		
Site Preparation	08/01/2026 to 10/06/2026	3 rubber tired dozers, 4 tractors/loaders/backhoes, & 4 water trucks
Rough Grading	10/07/2026 to 08/31/2027	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Utility Trenching	03/20/2027 to 11/05/2027	2 excavators & 1 trencher
Fine Grading	06/27/2027 to 03/18/2028	2 excavators, 1 grader, 1 rubber tired dozer, 2 scrapers, 2 tractors/loaders/backhoes, & 8 water trucks
Asphalt Paving	09/03/2027 to 03/18/2028	2 pavers, 2 paving equipment, & 2 rollers
Finishing/Landscaping	11/08/2027 to 05/25/2028	1 tractor/loader/backhoe
Building Construction	03/21/2028 to 05/31/2030	1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, & 1 welder
Architectural Coating	11/15/2029 to 05/31/2030	1 air compressor

Notes: n/a = not applicable
1 Based on the development phasing presented in Section 3.3.3, *Project Phasing*, of the DEIR, information provided, and CalEEMod defaults.
2 Water trucks are based on 10,000 gallons per acre disturbed and a 4,000 gallon water truck (Maricopa 2005)

- **Soil Haul.** For purposes of modeling, it is assumed that approximately 20 percent (35,655 cubic yards) of the 178,275 cubic yards of the impacted soils associated with the remediation activities would be transported off-site to the Soil Safe of California facility in Adelanto. This facility is approximately 75 miles from the project site, with approximately 21.9 miles in the MDAB and 53.10 miles in the SoCAB. Soil haul truck emissions are proportioned between these two air basins based on distance traveled in each (i.e., 29.2 percent in the MDAB and 70.8 percent in the SoCAB).

Health Risk and Air Dispersion Modeling

A construction health risk assessment (HRA) from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the proposed project. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck haul route. Modeling is based on the EPA's AERMOD, v. 10.2.1, air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to estimate excess lifetime cancer risks, chronic noncancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site and on-site sensitive receptors, and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime (OEHHA 2015).

DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day. Construction of the proposed project would occur continuously over a total cumulative duration of approximately 6.84 years (1,784 workdays) between years 2023 and 2030. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction. The off-site hauling emission rates were adjusted to evaluate localized emissions from the haul route distance within 1,000 feet of the project site.

Air dispersion modeling using AERMOD was conducted to assess the impact of emitted compounds on sensitive receptors. The model is a steady-state Gaussian plume model and is approved by South Coast AQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. Meteorological data from the South Coast AQMD for the nearest representative meteorological station (Fullerton Airport) with the five latest available years (2012 to 2016) of records were used to represent local weather conditions and prevailing winds.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the polygonal area sources for on-site construction emissions and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations at each sensitive receptor were multiplied by the construction emission rates to obtain the maximum concentrations at the off-site maximum exposed receptors. The calculated total cancer risk for a resident conservatively assumes that the maximum exposed individual resident (MEIR) is a pregnant woman in the third trimester that gives birth during the approximately seven-year construction window; therefore, calculated risk values for years 2023 through part of 2025 (up to 2 years of age) were multiplied by a factor of 10. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day, 260 construction days per year, and exposed to all of the daily construction emissions.

For the Olinda Elementary School student receptors, it is assumed the ages range between 4 to 11 years based on the grade levels of preschool through 6th grade. Therefore, all calculated risk values were multiplied by a factor of 3. Additionally, it is assumed the students were outdoors and are subject to DPM for 8 hours per day, and approximately 180 school days per year.

Lastly, for the North Hills Preschool student receptors, it is assumed the ages range between six weeks to five years, which is the age range accommodated by this facility. All calculated risk values for years 2023 through part of 2025 were multiplied by a factor of 10. The risk values for the remaining part of year 2025 to year 2030 were multiplied by a factor of 3. It is assumed the students were outdoors and are subject to DPM for 8 hours per day, and approximately 250 school days per year.

5.3.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Construction activities associated with the proposed project would generate short-term emissions of NO_X in exceedance of South Coast AQMD's threshold criteria. [Threshold AQ-2]

Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions in the SoCAB. The primary source of NO_x, CO, and SO_X emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated

with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included in section 5.3.1, *Environmental Setting,* "Air Pollutants of Concern."

Emissions in the SoCAB

As discussed in Section 3.3.3, *Project Phasing*, of this DEIR, it is anticipated that buildout of the proposed Specific Plan would be implemented in three phases based on oil field abandonment, remediation, and construction of necessary infrastructure. An estimate of maximum daily construction emissions is provided in Table 5.3-11, *Maximum Daily Regional Construction Emissions Estimate*. The table shows the highest daily emissions that would be generated over the anticipated development period.

Table 5.3-11 Maximum Daily Regional Construction Emissions Estimate

Construction Phase(s)	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2023[3]	7	**103**	56	<1	22	11
Year 2024[4]	9	**114**	82	<1	25	12
Year 2025	43	63	64	<1	13	7
Year 2026	6	48	63	<1	18	8
Year 2027	41	84	104	<1	21	9
Year 2028	4	38	44	<1	6	3
Year 2029	12	14	19	<1	1	1
Year 2030	12	9	19	<1	1	<1
Worst-Case Day	43	**114**	104	<1	25	12
South Coast AQMD Regional Thresholds	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2020.4.0. Highest winter or summer emissions are reported.
1 Construction equipment mix is based on CalEEMod default construction mix.
2 Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.
3 The worst-case day for NO_X in year 2023 would be generated during overlap of the Western Remediation site preparation and Phase 1 site preparation activities.
4 The worst-case day for NO_X in year 2024 would be generated during overlap of the Phase 1 building construction, Eastern Remediation grading, and Phase 2 site preparation activities.

As shown in the table, construction activities associated with development of the proposed project could potentially exceed the South Coast AQMD regional threshold for NO_X. The primary source of NO_X emissions is vehicle and construction equipment exhaust. Because NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$), project-related emissions of NO_X would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Therefore, project-related construction activities would result in potentially significant regional air quality impacts.

Emissions in the MDAB

As stated, the anticipated remediation activities are assumed to result in the transport of approximately 20 percent of the total impacted soil to a facility in Adelanto. For purposes of modeling, approximately 21.9 miles of the 75-mile haul route would be in the MDAB. Table 5.13-12, *Maximum Regional Construction Emissions*

in the MDAB, shows the emissions associated with the haul trucks in the MDAB. As shown in the table, the air pollutant emissions from construction-related activities would be less than their respective MDAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant in the MDAB.

Table 5.3-12 Maximum Regional Construction Emissions in the MDAB

	Criteria Air Pollutants (lbs/day)[1]					
Source	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Western Remediation Rough Grading – Year 2024	<1	16	5	<1	2	1
Eastern Remediation Rough Grading – Year 2024	<1	15	5	<1	2	1
Maximum Daily Emissions	1	16	5	<1	8	3
MDAQMD Threshold	137	137	548	137	82	82
Exceeds Threshold?	No	No	No	No	No	No
	Criteria Air Pollutants (tons/year)[1,2]					
Source	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Western Remediation Rough Grading – Year 2024	<1	<1	<1	<1	<1	<1
Eastern Remediation Rough Grading – Year 2024	<1	<1	<1	<1	<1	<1
Maximum Annual Emissions	<1	<1	<1	<1	<1	<1
MDAQMD Threshold	25	25	100	25	15	15
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod, version 2020.4.0.
[1] Emissions shown represent the proportion of the total emissions generated from impacted soil haul truck trips associated with the anticipated remediation efforts that would occur within the MDAB.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-2: Long-term operation of the proposed project would generate emissions of VOC in exceedance of South Coast AQMD's threshold criteria. [Threshold AQ-2]

Buildout of the proposed project would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Mobile-source criteria air pollutant emissions are based on vehicle trip generation data provided by LLG (see Appendix N of this DEIR). The proposed Specific Plan emphasizes the development of a variety of residential types to accommodate housing demand in the city and region. As discussed in Impact 5.14-1 of this DEIR, the city is currently jobs-rich, with 2.98 jobs per housing unit. Implementation of the proposed project, which would provide additional housing, would decrease the jobs-to-housing ratio to 2.80 jobs per housing unit. Because the recommended jobs-housing ratio ranges between 1.3 to 1.7, implementation of the proposed project would improve the jobs-housing balance for the city overall and could contribute to reducing the average distance traveled between where people live and work (i.e., reduce passenger VMT).

As shown in Table 5.3-13, *Maximum Daily Regional Operational Phase Emissions*, operation of the proposed residential land uses at buildout would generate VOC emissions that exceed the South Coast AQMD's regional significance threshold. The primary sources of VOC during operation would be from use of

consumer cleaning products and exhaust emitted from project-related vehicle trips. Because VOC is a precursor to the formation of O_3, it would contribute to the O_3 nonattainment designation of the SoCAB. Therefore, the proposed project could significantly contribute to the nonattainment designations of the SoCAB, and operation-related regional air quality impacts would be potentially significant.

Table 5.3-13 Maximum Daily Regional Operational Phase Emissions

Source	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	36	19	98	<1	2	2
Energy	1	5	2	<1	<1	<1
Transportation	27	17	263	1	85	23
Total	**64**	42	364	1	87	25
South Coast AQMD Regional Thresholds	55	55	550	150	150	55
Significant?	**Yes**	No	No	No	No	No

Source: CalEEMod Version 2020.4.0. Based on highest winter or summer emissions using calendar year 2035 vehicle emission rates. Manual summation may not equal the shown totals may due to rounding. Excludes permitted sources of emissions that are covered under South Coast AQMD regulations.

Overlap of Construction and Operational Phase

Based on the assumed construction and buildout schedule of the proposed project, there is potential for overlap between construction and operational activity. It should be noted that, based on the estimated construction schedule, the site remediation would precede occupancy of any of the proposed buildings within the project site. Thus, there would be no overlap between the site remediation and the occupancy of the buildings. The vertical construction phase of the residential units on the project site would occur on an individual basis and could result in an overlap with occupancy. Combining the maximum daily construction emissions with the maximum daily operational emissions would give a maximum daily emission representing peak construction activity and full buildout of the project, an impossible scenario. At the request of South Coast AQMD, hypothetical overlap of construction and operational activities is shown in Table 5.3-14, *Potential Overlap of Construction and Operational Activities*. South Coast AQMD does not have a significance threshold for construction/operation overlap; therefore, this analysis is included for informational purposes only.

Table 5.3-14 Potential Overlap of Construction and Operational Activities

Source	Unmitigated Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Peak Emissions	43	114	104	<1	25	12
Maximum Operational Emissions	64	42	364	1	87	25
Max Daily Combined Emissions	106	156	467	1	112	38

Source: CalEEMod Version 2020.4.0.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-3: Long-term operation of the land uses associated with buildout of the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants or toxic air contaminants. [Threshold AQ-3]

Operation of new land uses that would be accommodated under the proposed project could generate new sources of criteria air pollutants and TACs in the Specific Plan area from area/stationary sources and mobile sources. Unlike the mass of operation emissions shown in Table 5.3-13, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Operation Phase Localized Significance Thresholds

The screening-level LSTs are the amount of project-related stationary and area sources of emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated a nonattainment area. The proposed project would primarily permit the development of residential uses only. Typical sources of criteria air pollutant emissions within the Specific Plan from stationary and area sources include energy use (natural gas used for cooking and water heating) and landscaping fuel and aerosols. Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the project site. Thus, the proposed project would not create land uses that would generate substantial concentrations of criteria air pollutant emissions. Therefore, localized operation-related air quality impacts are considered less than significant.

Operational Phase Toxic Air Contaminants

As stated, types of land uses that typically generate substantial quantities of criteria air pollutants and TACs are industrial (stationary sources) and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not permitted in the project site. The proposed project would only accommodate residential land uses and public recreation areas. Therefore, the Specific Plan would not result in creation of land uses that would generate substantial concentrations of TACs. Therefore, overall, impacts related to TACs are considered less than significant.

Operational Phase CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by South Coast AQMD did not predict a violation of CO standards at the busiest intersections in Los Angeles during the peak morning and afternoon periods.[16] As identified in South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak

[16] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not of congestion at a particular intersection (South Coast AQMD 1992; South Coast AQMD 2003).

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017). Under full buildout conditions, the proposed project would generate up to 1,059 peak hour trips (mid-day). Thus, implementation of the proposed project would not produce the volume of traffic required (i.e., 24,000 to 44,000 peak hour vehicle trips) to generate a CO hotspot. Therefore, implementation of the Specific Plan would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site, and impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-4: Construction-related emissions associated with land uses accommodated under the proposed project would not expose sensitive receptors to substantial concentrations of criteria air pollutants. [Threshold AQ-3]

Development of new land uses that would be accommodated under the proposed project could generate new sources of criteria air pollutants from construction equipment exhaust and fugitive dust (criteria air pollutants only). Implementation of the proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels.

Localized Construction Impacts in the SoCAB

Localized Significance Thresholds

The screening-level LSTs are the amount of project-related emissions at which localized concentrations could exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated nonattainment. Screening-level LSTs are based on the proposed project site size and distance to the nearest sensitive receptor. Thresholds are based on the California AAQS, which are the most stringent AAQS, established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise.

Table 5.3-15, *Maximum Daily On-Site Localized Construction Emissions*, shows the maximum daily construction emissions (pounds per day) generated during on-site construction activities. As shown in the table, maximum daily construction emissions would not exceed the South Coast AQMD screening-level LSTs for NO_X and CO. However, construction activities would exceed the screening-level LSTs for PM_{10} and $PM_{2.5}$. The on-site PM_{10} and $PM_{2.5}$ emissions shown in the table represent the total on-site particulate matter emissions from vehicle exhaust and fugitive dust.

Table 5.3-15 Maximum Daily On-Site Localized Construction Emissions

Construction Scenario	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 2 Asphalt Paving & Finishing/Landscaping – Year 2025	10	17	0.47	0.43
Phase 3 Finishing/Landscaping – Year 2028	1	2	0.05	0.05
Less Than 1-Acre LSTs[3]	103	522	4.00	3.00
Exceeds LSTs?	No	No	No	No
Phase 1 Building Construction – Year 2024	13	16	0.61	0.58
Phase 1 Building Construction – Year 2025	12	16	0.53	0.50
Phase 1 Building Construction & Architectural Coating, & Phase 2 Rough Grading – Year 2025	14	18	0.58	0.55
Phase 2 Building Construction – Year 2026	12	16	0.53	0.50
1.31-Acre LSTs[3]	117	597	4.62	3.31
Exceeds LSTs?	No	No	No	No
Phase 1 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2024	24	33	1.15	1.07
Phase 1 Finishing/Landscaping & Building Construction – Year 2024	15	18	0.68	0.64
Phase 2 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2025	22	33	1.00	0.93
Phase 2 Asphalt Paving, Finishing/Landscaping, & Building Construction – Year 2026	22	33	1.00	0.93
Phase 2 Finishing/Landscaping & Building Construction – Year 2026	14	18	0.58	0.55
1.81-Acre LSTs[3]	139	717	5.62	3.81
Exceeds LSTs?	No	No	No	No
Western Remediation Site Preparation – Year 2023	28	18	**9.67**	**5.48**
Phase 1 Site Preparation – Year 2023	28	18	**9.67**	**5.48**
Phase 2 Site Preparation – Year 2024	27	18	**9.63**	**5.45**
Phase 2 Site Preparation – Year 2025	25	18	**9.49**	**5.32**
3.50-Acre LSTs[3]	184	1,036	8.50	5.00
Exceeds LSTs?	No	No	**Yes**	**Yes**
Western Remediation Grading – Year 2023	35	28	5.41	2.88
Phase 1 Rough Grading – Year 2023	35	28	5.36	2.87
Phase 1 Rough Grading & Utility Trenching – Year 2023	40	35	5.68	5.17
Phase 1 Rough Grading & Utility Trenching – Year 2024	37	34	5.58	3.07
Phase 1 Utility Trenching & Fine Grading – Year 2024	37	34	5.58	3.07
Phase 1 Fine Grading & Asphalt Paving – Year 2024	42	42	5.74	3.22
Phase 2 Rough Grading – Year 2025	28	26	5.07	2.60
Phase 2 Rough Grading & Utility Trenching – Year 2025	33	35	5.38	2.89
Phase 2 Fine Grading – Year 2025	28	26	5.07	2.60
Phase 2 Utility Trenching & Fine Grading – Year 2025	33	35	5.38	2.89
Phase 2 Fine Grading & Asphalt Paving – Year 2025	37	41	5.48	2.99
Phase 3 Utility Trenching & Fine Grading – Year 2027	33	35	5.38	2.89

Table 5.3-15 Maximum Daily On-Site Localized Construction Emissions

Construction Scenario	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 3 Utility Trenching, Fine Grading, & Asphalt Paving – Year 2027	42	50	5.80	3.28
Phase 3 Fine Grading & Asphalt Paving – Year 2027	37	41	5.48	2.99
4.00-Acre LSTs[3]	196	1,128	9.33	5.33
Exceeds LSTs?	No	No	No	No
Phase 1 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2024	43	45	5.80	3.28
Phase 2 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2025	38	43	5.54	3.04
Phase 3 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2027	38	43	5.54	3.04
Phase 3 Fine Grading, Asphalt Paving, & Finishing/Landscaping – Year 2028	38	43	5.54	3.04
4.50-Acre LSTs[3]	209	1,219	10.16	5.67
Exceeds LST?	No	No	No	No
Phase 2 Building Construction & Site Preparation – Year 2026	38	34	10.02	5.82
4.81-Acre LSTs[3]	216	1,277	10.68	5.87
Exceeds LSTs?	No	No	No	No
Phase 1 Rough Grading, Utility Trenching, & Fine Grading – Year 2024	70	62	10.85	5.86
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	68	53	**19.88**	**11.48**
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	73	62	**15.57**	**8.82**
Phase 1 Building Construction & Phase 2 Rough Grading – Year 2025	41	42	5.68	3.18
Phase 2 Rough Grading, Utility Trenching, & Fine Grading – Year 2025	61	62	10.45	5.50
Phase 2 Building Construction & Phase 3 Rough Grading – Year 2026	40	42	5.59	3.10
Phase 2 Building Construction & Phase 3 Rough Grading – Year 2027	40	42	5.59	3.10
Phase 2 Building Construction, Phase 2 Architectural Coating, & Phase 3 Rough Grading – Year 2027	42	44	5.64	3.15
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, & Phase 3 Utility Trenching – Year 2027	47	53	5.96	3.44
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	75	80	**11.03**	**6.04**
Phase 3 Rough Grading, Utility Trenching, & Fine Grading – Year 2027	61	62	10.45	5.50
5.00-Acre LSTs[3]	221	1,311	10.99	6.00
Exceeds LSTs?	No	No	**Yes**	**Yes**

Source: CalEEMod 2020.4.0; South Coast AQMD 2008; South Coast AQMD 2011. Highest winter or summer emissions are reported.
1 Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults.
2 Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.
3 Screening-level LSTs are based on receptors within 82 feet (25 meters).

In accordance with South Coast AQMD methodology, because the proposed project would result in construction activities that generate on-site emissions exceeding the PM_{10} and $PM_{2.5}$ screening-level LSTs, dispersion modeling was conducted using AERMOD, version 10.2.1, air dispersion modeling program. The

calculated concentration levels associated with the construction activities that would generate on-site emissions exceeding the screening-level LSTs are shown in Table 5.3-16, *Construction LSTs*. As shown in the table, project-related construction activities would not generate emissions that would exceed the South Coast AQMD LSTs. Thus, construction activities associated with the proposed project would not generate emissions that expose receptors to substantial concentrations of criteria air pollutants, and impacts are considered less than significant.

Table 5.3-16 Construction LSTs

Construction Scenario	24-Hour Concentrations		Annual Average Concentration
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)
Maximum Exposed Individual Resident			
Western Remediation Site Preparation – Year 2023	1.5	0.83	0.04
Phase 1 Site Preparation – Year 2023	1.5	0.83	0.04
Phase 2 Site Preparation – Year 2024	1.6	0.88	0.4
Phase 2 Site Preparation – Year 2025	1.4	0.80	0.04
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	3.2	1.85	0.8
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	2.5	1.42	0.7
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	0.2	0.11	0.4
Maximum Exposed School Receptor – Olinda Elementary School			
Western Remediation Site Preparation – Year 2023	0.9	0.5	0.1
Phase 1 Site Preparation – Year 2023	0.9	0.5	0.1
Phase 2 Site Preparation – Year 2024	0.9	0.5	0.1
Phase 2 Site Preparation – Year 2025	0.9	0.5	0.1
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	1.9	1.1	0.3
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	1.5	0.9	0.2
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	1.1	0.6	0.1
Maximum Exposed School Receptor – North Hills Preschool			
Western Remediation Site Preparation – Year 2023	0.3	0.19	0.02
Phase 1 Site Preparation – Year 2023	0.3	0.19	0.02
Phase 2 Site Preparation – Year 2024	0.4	0.20	0.03
Phase 2 Site Preparation – Year 2025	0.3	0.19	0.02
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Site Preparation – Year 2024	0.7	0.43	0.1
Phase 1 Building Construction, Phase 2 Site Preparation, & Eastern Remediation Grading – Year 2024	0.6	0.33	0.05

Table 5.3-16 Construction LSTs

Construction Scenario	24-Hour Concentrations		Annual Average Concentration
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)
Phase 2 Building Construction, Phase 2 Architectural Coating, Phase 3 Rough Grading, Phase 3 Utility Trenching, & Phase 3 Fine Grading – Year 2027	0.4	0.21	0.1
South Coast AQMD LST Significance Thresholds	10.4	10.4	1.0
Exceeds Threshold?	No	No	No

Source: AERMOD Version 10.2.1.

Localized Construction Impacts in the MDAB

As shown above in Table 5.3-12, project-related regional construction emissions generated in the MDAB would be below the MDAQMD regional significance thresholds. Therefore, per MDAQMD methodology, project-related construction activities would result in less than significant localized impacts.

Level of Significance Before Mitigation: Less than significant.

Impact 5.3-5: Project-related construction activities would result in potentially significant cancer risk impacts to nearby off-site residences. [Threshold AQ-3]

The proposed project would temporarily elevate concentrations of TACs and DPM in the vicinity of sensitive land uses during construction activities. As stated, South Coast AQMD currently does not require health risk assessments for short-term emissions from construction equipment, which primarily consist of DPM. However, this analysis has been included to conservatively gauge the potential health-risk-related impacts of short-term construction activities on off-site sensitive receptors.

The proposed project would be developed over three development phases in addition to the required remediation. It is anticipated that the construction durations for Phase 1, Phase 2, and Phase 3 would be 22 months, 34 months, and 46 months, respectively. For purposes of this analysis, remediation for each of the designated areas would last one month. Overall, construction would occur continuously from 2023 to 2030. The estimated excess lifetime cancer risk and chronic noncancer hazard index at the nearest sensitive receptors are shown in Table 5.3-17, *Construction Risk Summary*.

Table 5.3-17 Construction Risk Summary

Receptor	Cancer Risk (per million)	Chronic Hazards
Maximum Exposed Individual Resident	**15.1**	0.5
Maximum Exposed School Receptor – Olinda Elementary School Students	1.0	0.02
Maximum Exposed Daycare Receptor – North Hills Preschool	1.1	0.004
Significance Thresholds	10	1.0
Exceeds Threshold?	**Yes**	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.

The results of the HRA are based on the maximum modeled receptor concentration over the construction exposure period, conservatively assuming a 24-hour per day outdoor exposure and averaged over a 70-year lifetime. According to the modeling results, the MEIR is the single-family residence south of State Route 142 in the pocket of land near the northeast portion of the Phase 3 development area. The maximum exposed receptor for the Olinda Elementary School, which is situated along East Birch Street next to the southwest corner of the Phase 2 development area of the Specific Plan, lies within the northeastern portion of the school campus.

As shown in the table above, the maximum incremental cancer risk during the construction phase of the project at the MEIR is 15.1 per million, which exceeds the significance threshold of 10 per million. Cancer risk for students at Olinda Elementary School and North Hills Preschool is 1.0 per million and 1.1 per million, respectively, and would not exceed 10 per million. For noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for the MEIR, the maximum exposed school receptor, and the maximum exposed daycare receptor. Therefore, chronic noncarcinogenic hazards are within acceptable limits. However, because the cancer risk for the MEIR would exceed the 10 per million threshold, project-related construction activities would result in potentially significant health risk impacts.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-6: The proposed project would generate long-term emissions that cumulatively contribute to the nonattainment designations in the SoCAB and therefore conflict with the South Coast AQMD Air Quality Management Plan. [Threshold AQ-1]

The following describes potential air quality impacts and consistency with the AQMP from the implementation of the proposed project.

South Coast AQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SoCAB to achieve the National and California AAQS. South Coast AQMD has responded to this requirement by preparing an AQMP. On March 3, 2017, the South Coast AQMD Governing Board adopted the 2016 AQMP, which is a regional and multiagency effort (South Coast AQMD, CARB, SCAG, and EPA). A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP.

The two principal criteria for conformance with an AQMP are:

1. Whether the project would exceed the assumptions in the AQMP.

2. Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timeline attainment of air quality standards.

SCAG is South Coast AQMD's partner in the preparation of the AQMP, providing the latest economic and demographic forecasts and developing transportation measures. Regional population, housing, and

employment projects developed by SCAG are based, in part, on a city's general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP and are incorporated into the regional transportation plan/sustainable communities strategy (RTP/SCS) prepared by SCAG to determine priority transportation projects and VMT in the SCAG region. Because the AQMP strategy is based on projections from local general plans, projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Additionally, only large projects have the potential to substantially affect the demographic forecasts in the AQMP.

Criterion 1

CEQA Guidelines Section 15206(b) states that a proposed project is of statewide, regional, or area-wide significance if the project is a residential development or more than 500 dwelling units. The proposed project would introduce a net increase of approximately 1,100 new dwelling units; therefore, it is a project of statewide, regional, or area-wide significance. As described under Impact 5.14-1, the anticipated population growth of 3,102 residents associated with the proposed project would be within the assumed population growth under the Brea General Plan and SCAG projections for the city. Thus, implementation of the proposed project would not substantially affect demographic projections beyond what is accounted for in the current 2016 AQMP. Furthermore, as discussed under Impact 5.3-2, the proposed project would improve the jobs-housing balance for the area, which could contribute to reducing VMT by providing more housing options closer to where people work. Therefore, the proposed project would not be considered inconsistent with the AQMP under the first criterion.

Criterion 2

With respect to the second criterion, as shown under Impact 5.3-2, the proposed project would generate long-term emissions of criteria air pollutants that would exceed South Coast AQMD's regional operation-phase significance thresholds, which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. Thus, long-term implementation of the proposed project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of the AAQS. Therefore, overall, the proposed project would be considered inconsistent with the AQMP under the second criterion.

Summary

Implementation of the proposed project would not substantially affect the population estimates for the City and the population estimate assumed in the 2016 AQMP. However, the proposed project would result in long-term VOC emissions in exceedance of the South Coast AQMD's regional operational significance threshold (see Table 5.3-13) and would cumulatively contribute to the nonattainment designations in the SoCAB. Therefore, the proposed project would be considered inconsistent with the AQMP and impacts would be potentially significant.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.3-7: The proposed project would not result in other emissions that would adversely affect a substantial number of people. [Threshold AQ-4]

Growth in the project site could generate new sources of odors. Nuisance odors from land uses in the SoCAB are regulated under South Coast AQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantifies of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Industrial and South Coast AQMD Permitted Land Uses

Industrial land uses have the potential to generate objectionable odors. Examples of industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch manufacturing plants, chemical manufacturing, and food manufacturing facilities. The proposed project would primarily involve the development of residential uses only. Thus, industrial-type land uses would generally be prohibited within the Specific Plan area. Therefore, impacts related to objectionable odors as it relates to industrial-type land uses for the proposed project would be less than significant.

Residential and Other Nonresidential Land Uses

Residential land uses could result in generation of odors such as exhaust from landscaping equipment and cooking. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Additionally, South Coast AQMD Rule 402 would minimize and provide a control for odors. Therefore, impacts from potential odors generated from residential land uses associated with the proposed project are considered less than significant.

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

Level of Significance Before Mitigation: Less than significant.

5.3.5 Cumulative Impacts

In accordance with South Coast AQMD and MDAQMD methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects in the local area include new development and general growth in the SoCAB. Due to the extent of the area potentially impacted from cumulative project emissions, South Coast AQMD and MDAQMD consider a project cumulatively significant when project-related emissions exceed the regional emissions thresholds shown in Table 5.3-5 and Table 5.3-9. No significant cumulative impacts were identified with regard to CO hotspots.

Construction

The SoCAB and MDAB are designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, lead (SoCAB: Los Angeles County only), and hydrogen sulfide (MDAB: Searles Valley Planning Area only) under the California and/or National AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. As discussed under Impact 5.3-1, project-related construction emissions would not exceed the MDAQMD regional significance thresholds, but would exceed the South Coast AQMD regional threshold for VOC. However, as discussed below in Section 5.3.8, implementation of mitigation measures for related projects would reduce project-related construction emissions to below the South Coast AQMD regional significance thresholds. Therefore, with incorporation of mitigation, the proposed project's contribution to cumulative air quality impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by South Coast AQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would result in emissions in excess of the South Coast AQMD regional emissions threshold for VOC. Therefore, the air pollutant emissions associated with the proposed project would be cumulatively considerable and impacts are significant and unavoidable.

5.3.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.3-3, 5.3-4, and 5.3-7.

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

- **Impact 5.3-1** Construction activities associated with the proposed project would generate short-term emissions of NO_X in exceedance of the South Coast AQMD threshold criteria.

- **Impact 5.3-2** Operation of the proposed project would generate long-term emissions of VOC in exceedance of South Coast AQMD threshold criteria.
- **Impact 5.3-5** Construction-related emissions associated with the proposed project could expose sensitive receptors to substantial concentrations of toxic air contaminants.
- **Impact 5.3-6** The long-term emissions generated by the proposed project would contribute to an increase in frequency or severity of air quality violations in the South Coast Air Basin and would conflict with the assumptions of the applicable Air Quality Management Plan.

5.3.7 Mitigation Measures

Impact 5.3-1

AQ-1 Construction and remediation contractors shall, at minimum, use equipment that meets the United States Environmental Protection Agency's (EPA) Tier 4 Interim emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for the following activities, unless it can be demonstrated to the City of Brea Building and Safety Division that such equipment is not available:

- Remediation phase ground disturbing activities (e.g., site preparation, grading, and trenching)
- Phase 1 ground disturbing activities (e.g., site preparation, grading, and trenching)
- Phase 1 building/structure construction
- Phase 2 ground disturbing activities (e.g., site preparation, grading, and trenching)

Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 4 Interim emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations.

Prior to construction, the project engineer shall ensure that all construction (e.g., grading) plans clearly show the requirement for EPA Tier 4 Interim emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the City of Brea. The construction equipment list shall state the makes, models, Equipment Identification Numbers, Engine Family Numbers, and number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Impact 5.3-2

Apply Mitigation Measures GHG-1 and GHG-2.

Impact 5.3-5

Apply Mitigation Measure AQ-1.

Impact 5.3-6

Apply Mitigation Measures GHG-1 and GHG-2.

5.3.8 Level of Significance After Mitigation

Impact 5.3-1

Implementation of Mitigation Measure AQ-1 would require off-road construction equipment of 50 horsepower or greater used for remediation, Phase 1, and Phase 2 ground disturbing activities (e.g., site preparation, trenching, and grading) and Phase 1 buildings and structures construction activities to be fitted with engines that meet the EPA's Tier 4 Interim emissions standards. As shown in Table 5.3-18, *Maximum Daily Regional Construction Emissions Estimate, Mitigated*, incorporation of Mitigation Measure AQ-1 would reduce project-related construction emissions of NO_X to below the respective significance threshold. Therefore, Impact 5.3-1 would be reduced to less than significant.

Table 5.3-18 Maximum Daily Regional Construction Emissions Estimate, Mitigated

Construction Phase(s)	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2023[3]	2	72	72	<1	19	8
Year 2024[4]	5	83	98	<1	22	10
South Coast AQMD Regional Thresholds	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2020.4.0. Highest winter or summer emissions are reported.

[1] Construction equipment mix is based on CalEEMod default construction mix.

[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Also include incorporation of Mitigation Measure AQ-1, which requires off-road equipment of 50 horsepower or more used for remediation, Phase 1, and Phase 2 ground disturbing activities and Phase 1 building/structures construction activities to be fitted with engines that meet the Tier 4 Interim emissions standards.

Impact 5.3-2

Implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing project-related long-term emissions of VOC. The prohibition of wood-burning and gas-powered fireplaces in addition to the requirement that all residential units be all electric under Mitigation Measure GHG-1 would contribute to reducing area source VOC emissions from on-site combustion of natural gas. These two measures would reduce daily VOC emissions by three pounds per day, which would reduce the overall maximum daily emissions to 61 pounds per day. Mitigation Measure GHG-2, which would require providing electric vehicle

charging stations and preferential parking spaces for low-emitting and carpool/van vehicles would also contribute to reducing mobile-source VOC emissions to the extent feasible. Because use of these parking spaces and charging stations are voluntary, an estimate of potential VOC reductions associated with these two measures is not provided. Although VOC emissions from consumer cleaning products would be a primary generator of VOC emissions, it would not be feasible to control the types of home cleaning products each individual homeowner would use.

Though implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to reducing project-related long-term emissions of VOC, they may not provide enough of a reduction to reduce project-related VOC emissions to below the South Coast AQMD regional significance threshold. Emissions of VOC that exceed the South Coast AQMD regional significance threshold would contribute to the ozone nonattainment designations of the SoCAB and cumulatively contribute to health impacts. As identified previously, the incremental effect of the project on health outcomes in the SoCAB is speculative. (see "Health Outcomes Associated with the Regional Significance Thresholds" in Section 5.3.2.1, *South Coast Air Quality Management District Thresholds*). Additionally, per South Coast AQMD, exceedance of the regional significance thresholds cannot be used to correlate a project to quantifiable health impacts unless emissions are sufficiently high to use a regional model (see Appendix C6). Because the AAQS are applied at the regional level, a regional scale air quality model is necessary to determine the concentrations of the criteria air pollutants in the SoCAB and whether they exceed the AAQS. In general, regional scale air quality modeling efforts are conducted by air districts because they are the agencies that oversee compliance of the air basins to the AAQS.

Regional air quality models currently available to air districts typically attempt to account for all emissions sources within an air basin. Due to the nature of the available regional model, the purpose of the AAQS, the AAQS being based on concentrations instead of mass emissions, and the complexity in correlating concentration levels with the amount of mass emissions generated, a large change in emissions would be needed to provide observable and meaningful results. For example, as part of its preparation of the 2012 AQMP, South Coast AQMD showed that reducing NO_X by 431 tons per day (157,680 tons per year) and VOC by 187 tons per day (68,255 tons per year) would reduce ozone concentration levels by only 9 parts per billion (see Appendix C6). Additionally, as part of the environmental assessment for Rule 1315, South Coast AQMD conducted pollutant modeling that accounted for essentially all of the increases in emissions due to new or modified sources in the South Coast AQMD between years 2010 and 2030. The estimated increases approximated to 6,620 pounds per day of NO_X and 89,947 pounds per day of VOC. Overall, the analysis for Rule 1315 showed that the increase in regional pollutant emissions would contribute to only a small increase in the SoCAB-wide ozone concentrations in 2030 of 2.6 ppb and less than 1 ppb of NO_2 (see Appendix C6). In comparing the proposed project, the maximum daily VOC emissions of 64 pounds per day would equate to 0.02 percent and 0.07 percent of the emissions estimated for the 2012 AQMP and Rule 1315, respectively. Thus, it can be reasonably assumed that project VOC emissions would likely be too negligible to affect ozone concentrations or for regional models to provide meaningful results.

Overall, while modeling of VOC exceedance using regional-scale modeling would not provide a reasonable degree of scientific certainty, and therefore would not provide reliable, credible information of value to decision-makers or the public regarding effects on health, air districts develop region-specific thresholds of significance based on existing attainment status for the California and National AAQS in the air basin (see

Table 5.3-3, *Attainment Status of Criteria Pollutants in the South Coast Area Air Basin*). The ambient air quality standards were developed based on scientific evidence related to the acceptable pollutant concentrations above which human health may be adversely impacted. These concentrations are the cumulative effect of all pollutant sources in the air basin. South Coast AQMD considers projects with emissions below the thresholds of significance to have a minor or negligible impact on the regional cumulative emission concentrations that exceed the ambient air quality standards. Projects that exceed an applicable threshold could contribute to the continued nonattainment designation of a region or potentially degrade a region from attainment to nonattainment, resulting in acute or chronic respiratory and cardiovascular illness from exposure to concentrations of criteria air pollutants above what the EPA and CARB consider safe. As identified above, the proposed project would generate long-term VOC emissions that exceed the South Coast AQMD regional significance threshold, which contribute to the formation of ozone. Therefore, Impact 5.3-2 is considered a significant and unavoidable impact.

Impact 5.3-5

As shown in Table 5.3-19, *Construction Risk Summary, Mitigated*, implementation of Mitigation Measure AQ-1 would reduce the cancer risk level at the MEIR to 6.6 per million, which would be below the 10 per million significance threshold. Therefore, with incorporation of mitigation, Impact 5.3-5 would be reduced to less than significant.

Table 5.3-19 Construction Risk Summary

Receptor	Cancer Risk (per million)[1]	Chronic Hazards[1]
Maximum Exposed Individual Resident	**6.6**	0.4
Significance Thresholds	10	1.0
Exceeds Threshold?	No	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
[1] include incorporation of Mitigation Measure AQ-1, which requires off-road equipment of 50 horsepower or more used for remediation, Phase 1, and Phase 2 ground disturbing activities and Phase 1 building/structures construction activities to be fitted with engines that meet the Tier 4 Interim emissions standards.

Impact 5.3-6

As discussed, incorporation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing VOC emissions from operation of the proposed project, to the extent feasible. However, it is anticipated that project-related operation-phase activities would still result in VOC emissions exceeding the South Coast AQMD regional significance threshold. Thus, the proposed project would continue to be inconsistent with the AQMP. Therefore, Impact 5.3-6 would be significant and unavoidable.

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5. Environmental Analysis
AIR QUALITY

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5.4 BIOLOGICAL RESOURCES

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

- *Biological Resources Technical Report: Brea 265 Specific Plan City of Brea, Orange County, California*, Cadre Environmental, January 2022.

A complete copy of this study is included in Appendix D of this Draft EIR.

5.4.1 Environmental Setting

5.4.1.1 REGULATORY BACKGROUND

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.

Federal Classifications

Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants. Recently, the USFWS instituted changes in the listing status of candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing at this time) and C3 species (either extinct, no longer a valid taxon, or more abundant than was formerly believed) are no longer considered candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. However, some USFWS field offices have issued memoranda stating that former C2 species should be considered Federal Species of Concern. This term is used in this analysis, but carries no official protections. All references to federally protected species in this DEIR (whether listed, proposed for listing, or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

5. Environmental Analysis
BIOLOGICAL RESOURCES

For the purposes of the analysis in this section, the following acronyms are used for federal status species:

- FE: Federal Endangered
- FT: Federal Threatened
- FPE: Federal Proposed Endangered
- FPT: Federal Proposed Threatened
- FC: Federal Candidate for Listing

When a species is listed under the FESA, USFWS must designate critical habitat for the species unless there are specific reasons for not designating critical habitat (e.g., such designation poses risks for the subject species). Critical habitat designations by USFWS are intended to guide federal agency action, and critical habitat is defined in Section 3 of the FESA as:

- The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the [FESA], on which [the USFWS believes] are found those physical or biological features a) Essential to the conservation of the species; and b) which may require special management considerations or protection; and

- Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination [by the USFWS] that such areas are essential for the conservation of the species.

Critical habitat designations are the USFWS's method of identifying for federal agencies the physical or biological features (to the extent known from information available at the time of designation) believed essential to the conservation of the species (such as space, food, cover, and protected habitat), focusing on the principal biological or physical constituent elements in an area considered essential to the conservation of the species (such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) affirms and implements the United States' commitment to four international conventions—with Canada, 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 (USACE) 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,

[1] "Waters of the United States," as applied to the jurisdictional limits of the USACE 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

which entails assessment of potential adverse impacts to USACE wetlands and jurisdictional waters and any mitigation measures that the USACE requires. Section 7 consultation with USFWS may be required for impacts to a federally listed species. 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 401 and 402

Section 401(a)(1) of the 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 USACE 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 Brea is in the jurisdiction of the Santa Ana 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 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 (CNDDB), 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.

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."

State Classifications

For the purposes of the analysis in this section, the following acronyms are used for state status species:

- SE: State Endangered
- ST: State Threatened
- SCE: State Candidate Endangered
- SCT: State Candidate Threatened
- SFP: State Fully Protected
- SP: State Protected
- SR: State Rare
- SSC: California Species of Special Concern
- CWL: California Watch List

The California Native Plant Society (CNPS) is a private organization dedicated to the monitoring and protection of sensitive plant species in the state. This organization has compiled an inventory of the geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California. The list serves as the candidate list for listing as threatened and endangered by CDFW, and the CNPS has the following categories of rarity ranking called California Rare Plant Ranking (CRPR).

- **CRPR 1A:** Presumed extinct in California.
- **CRPR 1B:** Rare, threatened, or endangered in California and elsewhere.
- **CRPR 2A:** Plants presumed extirpated in California but common elsewhere
- **CRPR 2B:** Plants rare, threatened, or endangered in California but more common elsewhere
- **CRPR 3:** Plants about which we need more information—a review list.
- **CRPR 4:** Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat.

The CNPS also adds an extension to the CRPR:

- **0.1:** Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
- **0.2:** Fairly threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
- **0.3:** Not very threatened in California (<20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates collection, transport, and commerce in plants that are listed. The CESA follows the NPPA and covers both plants and wildlife determined to be threatened with extinction or endangered. Plants listed as rare under the NPPA are designated as threatened under the CESA.

The CNDDB provides global and state rankings for species and communities based on a system developed by the Nature Conservancy to measure rarity of a species. State and global rankings are used to prioritize conservation and protection efforts so that the rarest species/communities receive immediate attention. In both cases, the lower ranking (i.e., Global Ranking G1or State Ranking S1) indicates extreme rarity. Rare species are given a ranking from 1 to 3. Species with a ranking of 4 or 5 have been determined to be common. If the exact global/state ranking is undetermined, a range is generally provided. For example, a global ranking of "G1G3" indicates that a species' global rarity is between G1 and G3. A ranking with "?" such as "S4?" indicates that the ranking is considered provisional and more information is required. If the animal being considered is a subspecies of a broader species, a "T" ranking is attached to the global ranking. The following are descriptions of global and state rankings:

Global Rankings

- **G1:** Critically imperiled globally because of extreme rarity (5 or fewer occurrences) or because of some factor(s) making it especially vulnerable to extinction.
- **G2:** Imperiled globally because of rarity (6 to 20 occurrences) or because of some other factor(s) making it very vulnerable to extinction throughout its range.
- **G3:** Either very rare and local throughout its range (21 to 100 occurrences) or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region) or because of some other factor(s) making it vulnerable to extinction throughout its range.
- **G4:** Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- **G5:** Common, widespread, and abundant.

State Rankings

- **S1:** Extremely rare—five or fewer viable occurrences in the state or less than 1,000 individuals or less than 1,280 acres, and may be especially vulnerable to extirpation.
- **S2:** Very rare—between 6 and 20 viable occurrences or less than 3,000 individuals or between 1,280 and 6,400 acres, and may be susceptible to becoming extirpated.
- **S3:** Rare to uncommon—21 to 100 viable occurrences or 3,000 to 10,000 individuals or between 6,400 and 32,000 acres; S3 ranked species are not yet susceptible to becoming extirpated in the state but may be if additional populations are destroyed.
- **S4:** Uncommon but not rare; some cause for long-term concern due to declines or other factors.

- S5: Common, widespread, and abundant in the state.

Special Status Criteria

For the purpose of this analysis, plants were considered "special status" based on one or more of the following criteria:

- Listing through the FESA or CESA:
  - Occurrence in the CNPS Rare Plant Inventory (Rank 1A/1B, 2A/2B, 3, or 4).
  - Occurrence in the CNDDB inventory.

- Wildlife species were considered "special-status" based on one or more of the following criteria:
  - Listing through the FESA and/or CESA.
  - Designation by the State as a Species of Special Concern (SSC) or California Fully Protected (CFP) species.

- Vegetation communities and habitats were considered "special status" based on one or more of the following criteria:
  - Global (G) and/or State (S) ranking of category 3 or less based on CDFW.
  - Riparian habitat.
  - Occurrence of vegetation community or habitat in the CNDDB inventory.

Local

The project site is in the City of Brea and unincorporated Orange County, and the project site is subject to the regulations of both jurisdictions.

City of Brea General Plan

The City of Brea General Plan Community Resources Element has goals and policies that pertain to protecting biological resources.

- **Goal CR-4:** Preserve open space aggressively for diverse purposes—as a visual and scenic resource, for habitat conservation, to protect watersheds, and for recreation.

  - **Policy CR-4.1.** Protect and preserve open space wherever possible.

  - **Policy CR-4.2.** Select areas for open space preservation using an evaluation system that incorporates the following selection criteria: connectivity, access/recreations, sensitive areas, natural features, subdivision pattern, and buffer zones.

  - **Policy CR-4.3.** Work aggressively with the Orange County, Los Angeles County, State, and other appropriate public agencies, private entities, and landowners to conserve, protect, and enhance open spaces and natural resources, particularly within the sphere of influence.

- **Goal CR-8:** Preserve and maintain wildlife and animal movement corridors.
  - **Policy CR-8.1.** Preserve key wildlife migration corridors and habitat areas.
  - **Policy CR-8.2.** Provide adequate wildlife crossings where roadways have severed habitat areas.
  - **Policy CR-8.3.** Cooperate with regional agencies and authorities with similar goals in protecting and enhancing wildlife and animal movement corridors.
  - **Policy CR-8.4.** Regular monitoring of medium and large mammals is necessary to gauge the effective ness of wildlife corridors and to identify or increases in wildlife populations.
- **Goal CR-9:** Preserve and maintain open space, natural habitat, and vegetation communities that support wildlife species and animals.
  - **Policy CR-9.1.** Support regional and sub-regional efforts to acquire, develop, operate, and maintain an open space system extending from the Puente Hills to the Chino Hills.
  - **Policy CR-9.2.** Preserve the integrity of blue line streams and riparian habitat areas.
  - **Policy CR-9.3.** Preserve and restore the habitat value of creek corridors though the preservation of native plants and the replacement of invasive, non-native plants with native plants.
  - **Policy CR-9.4.** Protect sensitive plant species resources from the impacts of development
  - **Policy CR-9.5.** Manage areas of diverse wildlife habitat as a natural resource and prevent major destruction **or** disruption.
  - **Policy CR-9.6.** Use specific management programs using sound ecological principles and professionally accepted methods are necessary to protect and restore sensitive animal populations and their habitats.

City of Brea Municipal Code

The Brea Municipal Code (BMC) identifies land use categories, development standards, and other provisions for development projects in the City of Brea. Section 20.206 provides provisions for development in the hillside residential zone (HR). Section 20.306.090 provides provisions for open space. The purpose of this section is to establish open space requirements and standards for the Hillside Residential zone to:

- Ensure open space is an integral part of subdivision design.
- Preserve prominent landforms, rock outcroppings, hydrologic features, and sensitive and unique habitat as permanent open space features to help frame a community's identity.
- Provide areas where residents can enjoy active and passive recreation; to integrate landscaped medians, parkways, and slopes into a development project.

- Ensure that parks, recreation centers, trails, and greenbelts are located next to natural open space to maximize the amount of contiguous areas of open space within a community and create space transition zones between residential development and open space.

The City of Brea has tree removal and replacement standards for development in the HR zone. Section 20.206.160.D, Tree Removal and Replacement, states:

> 1. For each existing native tree or shrub removed or damaged with a combined caliper equal to or greater than four (4) inches at four (4) feet above finish grade, a twenty-four (24)-inch box minimum replacement tree or shrub of the same genus and species shall be planted on the site. For trees equal to or in excess of an eight (8)-inch combined caliper, the replacement tree shall be a forty-eight (48)-inch box or larger of the same genus and species. Should a tree of the same genus and species not be available, the applicant shall submit reasonable proof of general unavailability in the region, and a list of no less than five (5) substitutes, one (1) of which shall be of the same genus, for approval by the Director of Development Services.
>
> 2. The Director of Development Services may approve a substitute or may require provisions, including but not limited to bonds or similar security, to assure the installation and maintenance of the specific genus desired.
>
> In order to ensure that native vegetation, such as oak trees, survive the construction phase of hillside development, any grading activities must be appropriately setback from the vegetation. Tree protection standards are established to ensure that preserved trees survive the construction phase. The preservation of trees will benefit hillside communities by giving an established appearance to the community.

In addition, Section 20.206 provides landscaping standards for the zone. BMC Section 20.206.160.D provides tree removal and replacement requirements, which is further discussed under Section 5.4.2, *Plans, Programs, and Policies*. Section 18.24.190 of the BMC provides requirements for street trees and landscaping along all streets and highways. Chapter 12.20 of the BMC also provides provisions for street trees, including the maintenance and removal of street trees.

5.4.1.2 INTERAGENCY MEETINGS

The following summarizes interagency meetings held to present and discuss the existing biological conditions, anticipated impacts to sensitive resources, critical habitat, jurisdictional features, and mitigation approaches. Representative agencies/jurisdictions included the USACE and USFWS.

- July 9th, 2019. USFWS/Aera Energy, Inc./ Glenn Lukos Associates (GLA): site visit
- August 8th, 2019. USACE/Aera Energy, Inc./GLA: site visit

The interagency meetings resulted in directives to achieve the following goals.

- Mitigate impacts to occupied coastal California gnatcatcher habitat.
- Mitigate impacts to coastal California gnatcatcher USFWS-designated critical habitat.
- Verify jurisdictional delineation and review proposed mitigation options.

The listed directives have been incorporated into the overall project design as presented in the biological resources technical report.

5.4.1.3 EXISTING CONDITIONS

The majority of the project site contains active oil operations by Aera Energy LLC. Approximately 190 oil wells have been drilled on the site, and 110 oil wells remain in operation. The project site on the east side of Valencia Avenue consists of land associated with oil operations, including oil fields, roads and paths, and related equipment and infrastructure. Disturbed, undeveloped land is scattered within the oilfield operations. Areas east of Valencia Avenue also support agricultural fields and operations bordering North Rose Drive. The areas west of Valencia Avenue include active and abandoned nursery facilities and active oil operations. Two ephemeral, disturbed drainages traverse the project site—a single drainage in the western region, and a drainage with a tributary in the eastern region.

The western region of the project site is relatively flat, but the eastern region has slopes ranging from 2 to 75 percent. Elevations range from approximately 400 to 590 feet above sea level. The project site contains the following soil types: Alo clay, Anaheim loam, Balcom clay loam, Callequas clay loam, Metz loamy sand, Mocho loam, Myford sandy loam, pits-Omni clay, San Emigdio fine sandy loam, Sorrento loam, and Yorba cobbly sandy loam. The soils association map in Figure 8 of the Biological Resources Technical Report (see Appendix D of this Draft EIR) shows the location of each of these soil types.

Field Surveys

The project applicant's biological consultant conducted the following biological resources surveys, and the dates and responsible biologists are summarized in Table 5.4-1, *Summary of Biological Surveys for the Project Site*:

- Focused burrowing owl surveys
- Focused California gnatcatcher surveys
- Focused bat surveys
- Focused crotch bumblebee surveys
- Vegetation mapping and habitat assessment
- Focused and general plant surveys
- Jurisdictional delineation

Table 5.4-1 Summary of Biological Surveys for the Project Site

Survey Type	2018 Survey Dates	Biologists
Focused Burrowing Owl Surveys	4/9, 5/2, 5/25, 7/3	JA
Focused California Gnatcatcher Surveys	4/6, 4/13, 4/19, 5/4, 5/11, 5/18	KL
Vegetation Mapping and Habitat Assessment	4/17, 4/19, 5/11, 6/18	KL, TB
Jurisdictional Delineation	4/25	KL, TB
Focused and General Plant Surveys	4/17, 4/18, 4/20, 4/25 5/18, 6/18	KL, DM, TB, JS
Focused Bat Surveys	7/3, 7/9	JA, SC. TB
Survey Type	**2019 Survey Dates**	**Biologists**
Jurisdictional Delineation	4/22, 8/8	TB
Survey Type	**2020 Survey Dates**	**Biologists**
Jurisdictional Delineation	5/4, 5/18	TB
Focused Crotch Bumblebee Surveys	4/11, 5/7, 7/6,	JA, TB
Survey Type	**2021 Survey Dates**	**Biologists**
Vegetation Mapping & Jurisdictional Delineation	7/12, 7/23	TB

JA = Jeff Ahrens, KL = Kevin Livergood, TB = Tony Bomkamp, SC = Stephanie Cashin, DM = Dave Moskovitz, JS = Jillian Stephens

The field surveys in Table 5.4-1 were conducted to meet the following objectives:

- Performance of vegetation mapping;
- Performance of site-specific habitat assessments and associated focused biological surveys to evaluate the potential presence/absence of special status species (or potentially suitable habitat) to the satisfaction of CEQA and federal and state regulations; and
- Delineation of aquatic resources (including the potential for wetlands and riparian habitat) potentially subject to the jurisdiction of the USACE, Regional Water Quality Control Board (RWQCB), and CDFW.

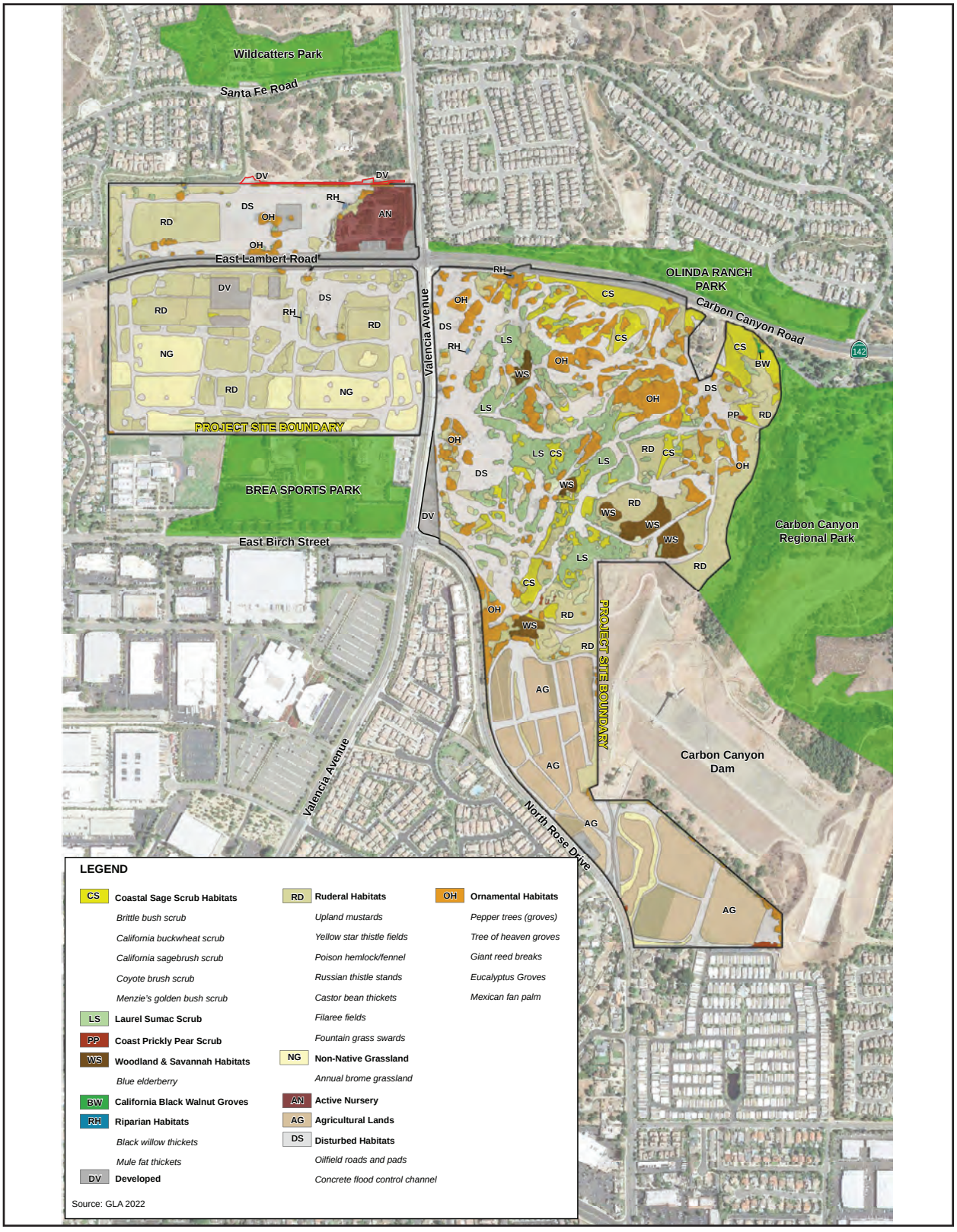
The details of the survey efforts and results are included in the Biological Technical Report (Appendix D to the DEIR).

Vegetation Communities

The project site is 262.1 acres and is dominated by nine habitat types—coastal sage scrub, chaparral, woodland and savannah, walnut grove, riparian, nonnative grassland, ruderal, ornamental, and developed/disturbed. Figure 5.4-1, *Vegetation Communities Map*, shows the locations of onsite habitats, and the following list provides a description of each habitat.

Figure 5.4-1 - Vegetation Communities Map

5. Environmental Analysis



Offsite Impact Area

0 1,000
Scale (Feet)

Source: CADRE Environmental, 2022

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- **Coastal Sage Scrub Habitat.** The project site includes 13.44 acres of coastal sage scrub habitat composed of California sagebrush scrub (9.84 acres), California buckwheat scrub (2.94 acres), coyote brush scrub (0.34 acre), coast prickly pear scrub (0.27 acre), and brittle bush scrub (0.05 acre). The California sagebrush scrub occurs primarily in areas of the project site east of Valencia Avenue in small isolated patches. The California buckwheat scrub occurs along the northern edge of the portion of the site east of Valencia Avenue. The coyote brush scrub occurs throughout the project site; where it does occur, it covers over 50 percent of the scrub layer with other occurring species. The coast prickly pear scrub occurs east of Valencia Avenue and at the southern end of the project site in small isolated patches. The brittle bush scrub occurs near the central-eastern boundary of the project site east of Valencia Avenue.

- **Chaparral Habitat.** The project site includes 16.99 acres of laurel sumac scrub. The habitat primarily occurs on the project site east of Valencia Avenue. The laurel sumac exhibits greater than 50 percent relative cover in the shrub canopy.

- **Woodland and Savannah Habitat.** The project site includes 5.47 acres of woodland and savannah habitat, which includes blue elderberry savannah (2.56 acres), blue elderberry stands (1.54 acres), and blue elderberry woodland (1.37 acres). The blue elderberry savannah occurs in the central portion of the project site east of Valencia Boulevard. The blue elderberry stands are scattered throughout the eastern parcel of the project site and cover greater than 5 percent of the shrub overstory. The blue elderberry woodland habitat is scattered throughout the eastern parcel and covers greater than 50 percent of the shrub overstory in these areas.

- **Walnut Grove Habitat.** The project site includes 0.07 acre of southern California black walnut groves. This habitat occurs on the northeastern edge of the project site, east of Valencia Avenue. In this area, it has a greater than 50 percent relative cover in the tree canopy.

- **Riparian Habitat.** The project site includes 0.14 acre of riparian habitat, which includes 0.11 acre of mule fat thickets and 0.03 acre of black willow thickets. The mule fat thickets occurs in the ephemeral drainage west of Valencia Avenue. The black willow thickets occur in two patches near the northeastern boundary of the project site east of Valencia Avenue.

- **Nonnative Grassland Habitat.** The project site includes 16.36 acres of red brome or Mediterranean grasslands. Areas throughout the project are dominated by these exotic, annual brome grasses.

- **Ruderal Habitat.** The project site includes 61.7 acres of ruderal habitat of upland mustards (36.48 acres), Russian thistle stands (18.01 acres), filaree fields (5.10 acres), poison hemlock or fennel patches (0.9 acre), castor bean thickets (0.85 acre), yellow star-thistle fields (0.3 acre), and fountain grass swards (0.06 acre). Upland mustards and Russian thistle strands occur throughout the project site and are invasive, nonnative species. Filaree fields (nonnative species) are primarily located west of Valencia Avenue, near the agricultural fields. Poison hemlock or fennel patches are nonnative and invasive and occur in several areas east of Valencia Avenue. Caster bean thickets occur throughout the project site. A patch of yellow star-thistle, a nonnative invasive species, occurs on the eastern side of the project site west of Valencia

Boulevard. A patch of fountain grass swards, an invasive nonnative species, occurs on the northern portion of the project site east of Valencia Avenue.

- **Ornamental Habitat:** The project site includes 20.15 acres of ornamental habitat, which includes pepper tree groves (8.05 acres), eucalyptus groves (6.86 acres), pepper tree or laurel sumac groves (3.13 acres), pepper tree individuals (1.83 acres), giant reed breaks (0.17 acre), other ornamental (0.07 acre), Mexican fan palm (0.03 acre), and tree of heaven groves (0.01 acre). Different species of pepper trees occur in groves on the western and eastern parcels of the project site. Nonnative eucalyptus species dominate in the central and northern areas of the project site east of Valencia Avenue. Peruvian pepper tree and laurel sumac groves are on the east of Valencia Avenue on the project site. Pepper tree individuals are in the western and eastern portions of the project site. Giant reed breaks, a nonnative invasive species, are on the northern boundary of the project site east of Valencia Avenue. Other nonnative ornamental species occur on the northwestern corner of the project site east of Valencia Avenue. Mexican fan palms, a nonnative species, occur in both the western and eastern portions of the project site. The tree of heaven is a nonnative, invasive species that occurs along East Lambert Road on the project site west of Valencia Avenue.

- **Developed/Disturbed:** The project site contains 128.38 acres of developed or disturbed land, which consists of oil field roads and pads (83.76 acres), agricultural fields and operations (27.71 acres), development (10.77 acres), active nursery (4.61 acres), bare ground (1.37 acres), and concrete flood control channel (0.16 acre). The oil operations occur throughout the project site. The agricultural land is on the southern half of the project site east of Valencia Avenue. Developed areas occur adjacent to roads and structures throughout the project site. The active nursery is west of Valencia Avenue and north of East Lambert Road. Bare ground primarily occurs on the southern portion of the project site adjacent to the agricultural operations. A concrete flood control channel is located between the agricultural areas on the southern portion of the project site.

Table 5.4-2, *Vegetation Communities Acreages*, provides a summary of vegetation/land uses, global and state ranking, and the corresponding acreage.

Table 5.4-2 Vegetation Communities Acreages

Vegetation Community	Scientific Name / Vegetation Alliance	Global and State Rank	CA Code	Acres
Coastal Sage Scrub Habitats				
California sagebrush scrub	*Artemisia californica Shrubland Alliance*	G5 S5	32.010.01	9.84
California buckwheat scrub	*Eriogonum fasciculatum Shrubland Alliance*	G5 S5		2.94
Coyote brush scrub	*Baccharis pilularis Shrubland Alliance*	G5 S5		0.34
Coast prickly pear scrub	*Opuntia littoralis Shrubland Alliance*	G3 S3		0.27
Brittle bush scrub	*Encelia farinosa Shrubland Alliance*	G5 S4		0.05
			Subtotal	**13.44**
Chaparral Habitats				
Laurel sumac scrub	*Malosma laurina Shrubland Alliance*	G4 S4		16.99
Woodland and Savannah Habitats				
Blue elderberry savannah	*Sambucus nigra Shrubland Alliance*	N/A	N/A	2.56
Blue elderberry stands	*Sambucus nigra Shrubland Alliance*		*63.410.01	1.54
Blue elderberry woodland	*Sambucus nigra Shrubland Alliance*	G3 S3	*63.410.01	1.37
			Subtotal	**5.47**
Walnut Grove Habitats				
California black walnut groves	*Juglans californica Woodland Alliance*	G3, S3.2		0.07
Riparian Habitats				
Mule fat thickets	*Baccharis salicifolia Shrubland Alliance*	G5 S4	63.510.01	0.11
Black Willow thickets	*Salix gooddingii Woodland Alliance*	G4 S3	*61.211.01	0.03
			Subtotal	**0.14**
Nonnative Grassland Habitats				
Red brome or Mediterranean grass grasslands	*Bromus rubens-Schismus (arabicus, barbatus) Semi-Natural Herbaceous Stands*	Cal-IPC high		16.36
Ruderal Habitats				
Upland mustards	*Brassica (nigra) and Other Mustards Semi-Natural Herbaceous Stands*	Cal-IPC moderate		36.48
Russian thistle stands	*Salsola tragus Semi-Natural Herbaceous Stands*	N/A	N/A	18.01
Filaree Fields		N/A	N/A	5.10
Poison hemlock or fennel patches	*Conium maculatum-Foeniculum vulgare Semi-Natural Herbaceous Stands*	Cal-IPC moderate		0.90
Castor bean thickets	*Ricinus communis Semi-Natural Shrubland Alliance*	N/A	N/A	0.85
Yellow star-thistle fields	*Centaurea (solstitialis, melitensis) Semi-Natural Herbaceous Stands)*	Cal-IPC moderate		0.30
Fountain grass swards	*Pennisetum setaceum Semi-Natural Herbaceous Stands)*	Cal-IPC moderate		0.06
			Subtotal	**61.7**
Ornamental Habitats				
Pepper tree groves	*Schinus (molle, terebinthifolius) Semi-Natural Woodland Stands*	Cal-IPC limited	Cal-IPC limited	8.05
Eucalyptus groves	*Eucalyptus (globulus, camaldulensis) Semi-Natural Woodland Stands*	Cal-IPC moderate	79.100.00	6.86
Pepper tree or Laurel sumac groves	*Schinus (molle, terebinthifolius)-Malosma laurina Semi-Natural Woodland Stands*	N/A	N/A	3.13

Table 5.4-2 Vegetation Communities Acreages

Vegetation Community	Scientific Name / Vegetation Alliance	Global and State Rank	CA Code	Acres
Pepper tree individuals	*Schinus (molle, terebinthifolius) Semi-Natural Woodland Stand*	Cal-IPC limited		1.83
Giant reed breaks	*Arundo donax Semi-Natural Herbaceous Stands*	Cal-IPC high	42.080.01	0.17
Other Ornamental		N/A	N/A	0.07
Mexican fan palm	*Washingtonia robusta Semi-Natural Woodland Alliance*	N/A	N/A	0.03
Tree of Heaven Groves	*Ailanthus altissima Semi-Natural Woodland Stands*	N/A	N/A	0.01
			Subtotal	**20.15**
Developed / Disturbed				
Oil Field Roads and Pads	N/A	N/A	N/A	83.76
Agriculture	N/A	N/A	N/A	27.71
Developed	N/A	N/A	N/A	10.77
Active Nursery	N/A	N/A	N/A	4.61
Bare	N/A	N/A	N/A	1.37
Concrete Flood Control Channel	N/A	N/A	N/A	0.16
			Subtotal	**128.38**
TOTAL				**262.7**

Source: Cadre 2022.

Global Ranking

G1 – Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or because of some factor(s) making it especially vulnerable to extinction.

G2 – Imperiled globally because of rarity (6-20 occurrences), or because of some other factor(s) making it very vulnerable to extinction throughout its range.

G3 – Either very rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or because of some other factor(s) making it vulnerable to extinction throughout its range.

G4 – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 – Common, widespread and abundant.

State Ranking

S1 – Extremely rare; five or fewer viable occurrences in the state; or less than 1,000 individuals; or less than 1,280 acres; and may be especially vulnerable to extirpation.

S2 – Very rare; between 6 and 20 viable occurrences; or less than 3,000 individuals, or between 1,280 and 6,400 acres and may be susceptible to becoming extirpated.

S3 – Rare to uncommon; 21 to 100 viable occurrences; or 3,000 to 10,000 individuals, or between 6,400 and 32,000 acres; S3 ranked species are not yet susceptible to becoming extirpated in the state but may be if additional populations are destroyed.

S4 - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 - Common, widespread, and abundant in the state.

Cal-IPC = California Invasive Plant Council.

Coastal California Gnatcatcher Critical Habitat

The coastal California gnatcatcher (*Polioptila californica californica*) is federally listed threatened and a California species of special concern that typically appears in or near dynamic and successional sage scrub habitat in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Non–sage scrub habitats, such as chaparral, grassland, and riparian areas, in proximity to sage scrub habitat provide space for dispersal, foraging, and nesting. A 141.40-acre portion of the project site east of Valencia Avenue is included in Critical Habitat Unit 9 designated for the coastal California gnatcatcher, as depicted in Figure 5.4-2, *Sensitive Faunal Species Observations Map*. The area designated as critical habitat consists of an active oil field that supports a predominance of nonnative trees, including blue gum eucalyptus and Peruvian pepper mixed with laurel sumac chaparral and limited areas of coastal sage scrub. The project site also contains substantial areas devoted to oil production activities, including unvegetated roads and pads. The portion of the project site designated critical habitat is bordered on the north by existing residential development, Valencia Avenue, and former nursery lands to the west that support nonnative grasses and forbs as well as residential and institutional lands to the west of Valencia Avenue. Areas to the south of the critical habitat include active agricultural areas (some of which are in the critical habitat overlay) and residential development. To the east is Carbon Canyon Regional Park and USACE-owned land associated with Carbon Canyon Dam that supports very limited areas of coastal sage scrub habitat.

Of the 141.40 acres of critical habitat, 83.98 acres (59.39 percent) do not constitute physical and biological features (PBF)—also known as primary constituent elements (PCE)—and 57.42 acres (40.61 percent) contain PBFs.[2] PBFs are the elements of physical or biological features which, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, the USFWS believes to be essential to the conservation of the species. The 2007 Final Rule for California gnatcatcher Critical Habitat categorizes PBFs as follows:

- **PBF1:** Dynamic and successional sage scrub habitats: Venturan coastal sage scrub, Diegan coastal sage scrub, Riversidean sage scrub, maritime succulent scrub, Riversidean alluvial fan scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal and foraging.

- **PBF2:** Non-sage scrub habitats such as chaparral, grassland, riparian areas, in proximity to sage scrub habitats as described for PBF 1 that provide space for dispersal, foraging, and nesting.

For areas with PBFs, 13.18 acres consist of fragmented coastal sage scrub, thereby constitute PBF1, and 44.24 acres consists of non-sage scrub habitat in proximity to sage scrub, thereby constitute PBF2 within the project site. Thus, of the 141.40 acres of critical habitat onsite, only 13.18 acres (9.3 percent) provide potential breeding habitat (PBF1). Of the PBF2 areas, 24.91 acres (17.62 percent) consist of nonnative mustards and annual nonnative grassland, which provide areas for foraging and movement only. And laurel sumac scrub, blue

[2] The designation of critical habitat for gnatcatcher uses the term primary constituent element (PCE). The new critical habitat regulations (81 FR 7214) replace this term with physical and biological features (PBF). This shift in terminology does not change the approach used in conducting the biological analysis, and the term PCE and PBF are both used in the DEIR.

elderberry savannah, and mule fat thickets account for 19.33 acres (13.67 percent), and though not suitable for breeding, do provide suitable foraging habitat and material for nest building when in close association with suitable breeding sites. Table 5.4-3, *Coastal California Gnatcatcher PBF Assessment*, provides a detailed breakdown of the 141.40 acres of critical habitat.

Table 5.4-3 Coastal California Gnatcatcher PBF Assessment

Habitat	Acreage	Habitat	Acreage	Habitat	Acreage
Project Site with Physical Biological Features Within Critical Habitat					
Upland mustards	24.84	Blue elderberry (savannah)	2.56	California brittle bush scrub	0.05
Laurel sumac scrub	16.75	Coyote brush scrub	0.23	Mule fat thickets	0.02
California sagebrush scrub	9.85	Coast prickly pear scrub	0.11		
California buckwheat scrub	2.94	Annual brome grassland	0.07		
Total PBF Within Critical Habitat: 13.18 (PBF1) + 44.24 (PBF2) = 57.42 acres					
Project Site without Physical Biological Features Within Critical Habitat					
Oilfield Roads and Pads	46.70	Blue elderberry (woodland)	1.37	Bare	0.20
Agriculture	11.10	Pepper tree	1.19	Giant reed thickets	0.10
Pepper tree grove	6.88	Poison hemlock patches	0.90	California walnut (groves)	0.07
Eucalyptus (groves)	6.58	Castor bean thickets	0.37	Fountain grass swards	0.06
Pepper/Laurel sumac (groves)	3.13	Filaree fields	0.28	Other ornamental	0.04
Developed	2.93	Russian thistle stands	0.26	Black willow thickets	0.03
Blue elderberry (individuals)	1.54	Yellow star thistle stands	0.24	Mexican fan palm	0.01
Total Project Site Not PBF Within Critical Habitat = 83.98 acres					
Total project site in critical habitat = 57.42 (PBF) + 83.98 (not PBF) = 141.4 acres					

Figure 5.4-2 - Sensitive Faunal Species Observations Map
5. Environmental Analysis



Offsite Impact Area

0 1,000
Scale (Feet)

Source: CADRE Environmental, 2022

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Wildlife

A total of 65 species, including reptiles, birds, and mammals, were recorded within the project site. Table 5.4-4, *Observed and Expected Wildlife Onsite*, lists the observed species and species that were not observed but are expected to occur on site.

Table 5.4-4 Observed and Expected Wildlife Onsite

Common Name	Scientific Name	Common Name	Scientific Name
OBSERVED			
Reptiles			
western fence lizard	*Sceloporus occidentalis*	side-blotched lizard	*Uta stansburiana*
Birds			
Canada goose	*Branta canadensis*	bushtit	*Psaltriparus minimus*
California quail	*Callipepla californica*	Bewick's wren	*Thryomanes bewickii*
turkey vulture	*Cathartes aura*	house wren	*Troglodytes aedon*
Cooper's hawk	*Accipiter cooperi*	blue-gray gnatcatcher	*Polioptila caerulea*
red-tailed hawk	*Buteo jamaicensis*	California gnatcatcher	*Polioptila californica*
killdeer	*Charadrius vociferus*	wrentit	*Chamaea fasciata*
whimbrel	*Numenius phaeopus*	Western bluebird	*Sialia mexicana*
mourning dove	*Zenaida macroura*	California thrasher	*Toxostoma redivivum*
greater roadrunner	*Geococcyx californianus*	Northern mockingbird	*Mimus polyglottos*
white-throated swift	*Aeronautes saxatalis*	European starling	*Sturnus vulgaris*
Anna's hummingbird	*Calypte anna*	American pipit	*Anthus rubescens*
Allen's hummingbird	*Selasphorus sasin*	Phainopepla	*Phainopepla nitens*
Nuttall's woodpecker	*Picoides nuttallii*	orange crowned warbler	*Oreothlypis celata*
acorn woodpecker	*Melanerpes formicivorus*	common yellowthroat	*Geothlypis trichas*
American kestrel	*Falco sparverius*	yellow-rumped warbler	*Setophaga coronata*
olive-sided flycatcher	*Contopus cooperi*	Wilson's warbler	*Cardellina pusilla*
Pacific-slope flycatcher	*Empidonax difficilis*	California towhee	*Melozone crissalis*
Say's phoebe	*Sayornis saya*	spotted towhee	*Pipilo maculatus*
ash-throated flycatcher	*Myiarchus cinerascens*	song sparrow	*Melospiza melodia*
western kingbird	*Tyrranis verticalis*	white-crowned sparrow	*Zonotrichia leucophrys*
least Bell's vireo	*Vireo bellii*	black-headed grosbeak	*Pheucticus melanocephalus*
western scrub-jay	*Aphelocoma californica*	Western meadowlark	*Sturnella neglecta*
American crow	*Corvus brachyrhynchos*	brown headed cowbird	*Molothrus ater*
common raven	*Corvus corax*	hooded oriole	*Icterus cucullatus*
barn swallow	*Hirundo rustica*	Bullock's oriole	*Icterus bullockii*
cliff swallow	*Hirundo pyrrhonota*	house finch	*Carpodacus mexicanus*
northern rough-winged swallow	*Stelgidopteryx serripennis*	lesser goldfinch	*Carduelis psaltria*
Mammals			
mule deer	*Odocoileus hemionus*	bobcat	*Lynx rufus*
coyote	*Canius latrans*	dusky woodrat	*Neotoma fuscipes*
brush rabbit	*Sylvilagus bachmani*	California ground squirrel	*Otospermophilus beecheyi*
Mexican free-tailed bat	*Tadarida brasiliensis*	canyon bat	*Parastrellus hesperus*

Table 5.4-4 Observed and Expected Wildlife Onsite

Common Name	Scientific Name	Common Name	Scientific Name
EXPECTED TO OCCUR ON SITE BUT NOT OBSERVED			
Reptiles			
gopher snake	*Pituophis melanoleucus*	common kingsnake	*Lampropeltis getulus*
Birds			
black phoebe	*Sayornis nigricans*	house sparrow	*Passer domesticus*
Brewer's blackbird	*Euphagus cyanocephalus*		
Mammals			
Virginia opossum	*Didelphis virginiana*	deer mouse	*Peromyscus maniculatus*
myotis bat	*Myotis spp.*	raccoon	*Procyon lotor*
Botta's pocket gopher	*Thomomys bottae*		

Source: Cadre 2019.
Notes: Presence of animals noted by direct sighting; call identification; or observation of tracks, scat, or other signs.

Jurisdictional Waters and Wetlands

Wetlands are "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions," as defined by 33 CFR 328.3(c)(4). Wetlands include areas such as streams, swaps, marshes, and bogs.

USACE and RWQCB Jurisdictional Waters

The USACE and RWQCB jurisdiction on the project site is associated with four ephemeral drainage features: Drainage A traverses the western portion of the project site; Drainage B traverses the eastern portion of the site and includes a small tributary "Drainage C"; and Drainage D is a concrete channelized segment of Carbon Canyon Creek in the southern portion of the project site. Figure 5.4-3, *USACE/RWQCB Jurisdictional Resources Map*, depicts the location of these drainages. Drainages A, B, and C include nonwetland ephemeral waters, and Drainage D consists of a concrete channel. As shown in Table 5.4-5, *USACE Jurisdictional Resource Acreages*, Drainage A is the largest of the four and includes 0.363 acre and 2,422 linear feet. Drainages B and C are 0.043 and 0.086 acre, respectively, and 241 and 1,149 linear feet, respectively. The concrete channel is 0.159 acre and 687 linear feet on the project site.

Table 5.4-5 USACE/RWQCB Jurisdictional Resource Acreage

Drainage Feature	Type	Acres	Linear Feet
Drainage A	Nonwetland Channel	0.363	2,422
Drainage B	Nonwetland Ephemeral Channel	0.043	241
Drainage C	Nonwetland Ephemeral Channel	0.086	1,149
Drainage D	Concrete Ephemeral Channel	0.159	687
	Total	**0.651**	**4,499**

Figure 5.4-3 - USACE/RWQCB Jurisdictional Resources Map

5. Environmental Analysis



Offsite Impact Area

0 1,000
Scale (Feet)

Source: CADRE Environmental, 2022

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CDFW Jurisdictional Waters

The CDFW jurisdiction is associated with the four drainage features. As shown in Table 5.4-6, *CDFW Jurisdictional Resource Acreage*, Drainage A contains 0.699 acre of nonriparian streambed and 0.032 acre of mule fat scrub riparian habitat. Drainage B contains 0.048 acre of ephemeral streambed and 0.031 acre of willow forest riparian habitat. Drainage C and Drainage D contain 0.086 and 0.159 acre of ephemeral streambed, respectively. Figure 5.4-4, *CDFW Jurisdictional Resources Map*, depicts the portion of the drainages that qualify as riparian.

Table 5.4-6 CDFW Jurisdictional Resource Acreage

Drainage Feature	Non-Riparian Streambed	Riparian	Total Acres	Linear Feet
Drainage A	0.699	0.032	0.731	2,422
Drainage B	0.048	0.031	0.079	241
Drainage C	0.086	0.00	0.086	1,149
Drainage D	0.159	0.00	0.159	687
Total	**0.86**	**0.063**	**1.055**	**4,499**

Sensitive Resources

Sensitive Habitats

Vegetation communities and habitats were considered "special-status" based on one or more of the following criteria:

- Global (G) and/or State (S) ranking of category 3 or less based on CDFW
- Riparian habitat
- Occurrence of vegetation community or habitat in the CNDDB inventory

The project site contains the following four special-status vegetation communities identified by the CNDDB:

- Southern California Black Walnut Woodland
- Blue Elderberry Woodland (not listed in the CNDDB for the subject quadrangles)
- Goodding's Black Willow Forest (not listed in the CNDDB for the subject quadrangles)
- Coast Prickly Pear (not listed in the CNDDB for the subject quadrangles)

A discussion of each of these vegetation communities is provided above. The location of each of these habitats is provided on Figure 5.4-1, and acreages tabulated in Table 5.4-2, *Vegetation Community Acreages*.

Sensitive Plants

For the purpose of this DEIR, plants were considered "special-status" based on one or more of the following criteria:

- Listing through FESA and/or CESA
- Occurrence in the CNPS Rare Plant Inventory (Rank 1A/1B, 2A/2B, 3, or 4)
- Occurrence in the CNDDB inventory

The Southern California black walnut is the only sensitive-status plant found on the project site. The Southern California black walnut has a California Rare Plant Rank (CRPR) List 4.2, which means that the species is of limited distribution throughout the range in California. The approximate number of Southern California black walnut trees documented within the project site is 126. These individuals are scattered throughout the northern half of the eastern project site in relatively disturbed areas among eucalyptus trees, pepper trees, and laurel sumac shrubs. This species is not federal or state listed as threatened or endangered. Figure 5.4-5, *Sensitive Floral Species Observations Map,* shows the locations of the Southern California black walnut, which is the only sensitive floral species observed on the project site.

Table 5.4-7, *Sensitive Plant Species with Potential to Occur Onsite*, provides a list of special-status plants that occur onsite or have a potential to occur on the project site. Species were evaluated based on: 1) species identified by the CNDDB and CNPS as occurring on or in vicinity of the project site (either currently or historically), and 2) any other special status plants that are known to occur within the vicinity of the project site, or for which potentially suitable habitat occurs within the project site. A complete list of the species that were evaluated is in Table 7 of the Biological Resources Technical Report (see Appendix D of the DEIR).

Table 5.4-7 Sensitive Plant Species with Potential to Occur Onsite

Common Name	Scientific Name	Federal / State Status	CDFG or CNPS	Potential to Occur
Braunton's milkvetch	*Astragalus brauntonii*	FE / None	List 1B.1	Potential to occur
Catalina mariposa lily	*Calochortus catalinae*	None / None	List 4.2	Potential to occur but not detected
Chaparral nolina	*Nolina cismontana*	None / None	List 1B.2	Potential to occur but not detected
Coulter's matilija poppy	*Romneya coulteri*	None / None	List 4.2	Potential to occur but not detected
Hubby's phacelia	*Phacelia hubbyi*	None / None	List 4.2	Potential to occur but not detected
Paniculate tarplant	*Deinandra paniculata*	None / None	List 4.2	Potential to occur but not detected
Robinson's pepper grass	*Lepidium virginicum var. robinsonii*	None / None	List 1B.2	Potential to occur but not detected
Southern California black walnut	*Juglans californica*	None / None	List 4.2	126 individuals observed onsite, including 0.07 acre Southern California black walnut grove

Source: Cadre, Biological Resources Technical Report, 2019.
Note: Table only includes species that occur onsite or have the potential to occur onsite. Refer to Table 7 of the Biological Resources Technical Report for a complete list.
USFWS: Federal Classifications
FE: Federally Endangered
Potential to occur – The species has a potential to occur onsite based on suitable habitat, but its presence/absence could not be confirmed.
CNPS: California Native Plant Society Classifications
1B: Plants rare, threatened, or endangered in California, but more common elsewhere
4: Plants of limited distribution, a watch list
.1: Seriously endangered in California
.2: Fairly endangered in California

Figure 5.4-4 - CDFW Jurisdictional Resources Map

5. Environmental Analysis



Source: CADRE Environmental, 2022

5. Environmental Analysis
BIOLOGICAL RESOURCES

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Figure 5.4-5 - Sensitive Floral Species Observations Map

5. Environmental Analysis



Source: CADRE Environmental, 2022

5. Environmental Analysis
BIOLOGICAL RESOURCES

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Sensitive Wildlife

Wildlife species were considered "special status" based on one or more of the following criteria:

- Listing through the FESA and/or CESA
- Designation by the State as a Species of Special Concern or California Fully Protected species

Five special-status animals were detected at the project site:

- **Coastal California Gnatcatcher** (*Polioptila californica californica*). Two breeding pairs of coastal California gnatcatchers (Federally threatened, State species of special concern) were detected onsite during focused survey efforts, as shown on Figure 5.4-2. One pair was associated with a 0.26-acre patch of California sagebrush in the central-western portion of the project site east of Valencia Avenue. This was the same area where a breeding pair was detected during 2017 protocol surveys. A second breeding pair was detected on a knoll approximately 750 feet northeast of the first pair in California sagebrush. During the 2017 survey a single gnatcatcher was observed in this area. The project site contains approximately 10.33 acres of suitable coastal scrub habitat within the close proximity to the coastal California gnatcatcher observations.

- **Least Bell's Vireo** (*Vireo bellii pusillus*). During protocol gnatcatcher surveys in 2018, an early-season migrant least Bell's vireos (LBV) passed through the survey area, as shown on Figure 5.4-2. This bird is a State- and federally listed endangered species. It occurs in dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest, which does not occur on the site. Detections were of single birds, and observation locations were not repeated during the early season observations, with one exception. The exception was a repeated observation of a single bird in a eucalyptus woodland south of the active oil field and north of the active agricultural area. Based on the timing of the LBV observations (late May to early June) it was most likely an unpaired male. The location is vegetated with a canopy of eucalyptus trees and understory of sparse mulefat, blue elderberry, and poison oak. During crotch bumblebee surveys on April 11, 2020, migrating LBV were detected in eucalyptus on the project site, and a single LBV was detected during subsequent surveys singing in elderberry immediately adjacent to where the LBV was observed in 2018.

- **Yellow Warbler** (*Setophaga petechia*). A yellow warbler (state species of special concern) was documented foraging on the project site near the southwest corner of the parcel east of Valencia Avenue, as shown on Figure 5.4-2. This species is a migratory songbird that breeds in riparian habitats in southern California. The yellow warbler exhibits habitat requirements similar to the yellow-breasted chat and least Bell's vireo. Suitable habitat typically consists of multilayered riparian scrub or willow woodland corridors along flowing streams.

- **California Horned Lark** (*Eremophila alpestris actia*). The California horned lark is a CDFW Watch List species. The California horned lark breeds and resides in the coastal region of California from Sonoma County southeast to the United States/Mexican border, including most of the San Joaquin Valley, and eastward to the foothills of the Sierra Nevada. The California horned lark is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. California horned

larks breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. The California horned lark was observed foraging within the grassland portions of the project site.

- **Cooper's Hawk** (*Accipiter cooperii*). Cooper's hawk is a CDFW Watch List species when nesting. This species occurs in riparian areas and oak woodlands, and most commonly in montane canyons. This species is also known to use urban areas, occupying mature trees associated with residential and commercial development and using utility poles as perches. Cooper's hawk was observed foraging within the project site, and the mature eucalyptus trees represent suitable nesting habitat.

Figure 5.4-2 shows the sightings in the project site of each of the special-status species discussed above. Table 5.4-8, *Sensitive Wildlife Species with Potential to Occur Onsite*, provides a list of special-status wildlife that have been detected onsite or have not been detected onsite but have the potential to occur. Table 8 in the Biological Resources Technical Report (Appendix D to the DEIR) provides a complete list of all the wildlife species that were evaluated for potential occurrence on the project site.

Table 5.4-8 Sensitive Wildlife Species with Potential to Occur Onsite

Common Name (Scientific Name)	Federal / State Status	CDFW	Habitat Requirements	Potential for Occurrence
California horned lark *(Eremophila alpestris actia)*	None / None	WL	Occupies a variety of open habitats, usually where trees and large shrubs are absent.	Detected onsite.
Coast horned lizard *(Phrynosoma blainvillii)*	None / None	SSC	Chaparral and coastal sage scrub	Moderate potential to occur on site. Not observed.
Coastal cactus wren *(Campylorhynchus brunneicapillus sandiegensis)*	BBC / None	SSC	Occurs almost exclusively in cactus (cholla and prickly pear) dominated coastal sage scrub.	Limited potential to occur on site. Not observed during focused surveys.
Coastal California gnatcatcher *(Polioptila californica californica)*	FT / None	SSC	Low elevation coastal sage scrub and coastal bluff scrub.	Observed breeding on site.
Coastal whiptail *(Aspidoscelis tigris stejnegeri)*	None / None	SSC	Open, often rocky areas with little vegetation, or sunny microhabitats within shrub or grassland associations.	Potential to occur on site. Not observed.
Cooper's hawk *(Accipiter cooperii)*	None / None	WL	Primarily occurs in riparian areas and oak woodlands, most commonly in montane canyons. Known to use urban areas, occupying trees among residential and commercial.	Detected onsite.
Great blue heron (*Ardea Herodias)*	None / None	None	Saltwater and freshwater habitats, from open coasts, marshes, sloughs, riverbanks, and lakes to backyards. Forages in grasslands and agricultural fields. Nests in trees or high places.	Potential to occur for occasional foraging.
Hoary bat *(Lasiurus cinereus)*	None / None	None	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Potential to occur. Not detected during focused bat surveys.

Table 5.4-8 Sensitive Wildlife Species with Potential to Occur Onsite

Common Name (Scientific Name)	Federal / State Status	CDFW	Habitat Requirements	Potential for Occurrence
Least Bell's vireo *(Vireo bellii pusillus)*	FE / SE	None	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Observed migrating through site. Low potential for breeding due to marginal habitat quality.
Merlin *(Falco columbarius)*	None/None	WL	Nests in forested openings, edges, and along rivers. Winters in open forests, grasslands, and especially coastal areas with flocks of small songbirds or shorebirds.	Not expected to occur; would only occur as wintering or migrant.
Orange-throated whiptail *(Aspidoscelis hyperythra)*	None / None	SSC	Coastal sage scrub, chaparral, nonnative grassland, oak woodland, and juniper woodland.	Potential to occur on site.
Pallid bat *(Antrozous pallidus)*	None / None	SSC	Habitats with rocky, outcropped areas.	Potential to occur for foraging. Not detected during surveys.
Red-diamond rattlesnake *(Crotalus ruber)*	None / None	SSC	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Potential to occur on site; not detected during surveys.
Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)*	None / None	WL	Grass-covered hillsides, coastal sage scrub, and chaparral.	Low potential to occur on site. Not detected during surveys.
Western mastiff bat *(Eumops perotis californicus)*	None / None	SSC	Prefers habitat edges and mosaics with trees that are protected from above and open from below with open areas for foraging. Roosts primarily in trees, 2 to 40 feet above ground, from sea level up through mixed conifer forests.	Potential to occur on site. Not detected during surveys.
Western yellow bat (*Lasiurus xanthinus)*	None / None	SSC	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Low potential to occur on site. Not detected during surveys.
White-tailed kite *(Elanus leucurus)*	None / None	FP	Breeds in riparian trees in lower elevation areas. Known from San Diego to San Luis Obispo counties.	Low potential to occur on site for foraging; not observed during surveys
Yellow-breasted chat *(Icteria virens)*	None / None	SSC	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Potential to occur on site. Not detected during surveys.
Yellow warbler (*Setophaga petechia)*	BCC / None	SSC	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Observed foraging on site.

Source: Cadre 2022.

USFWS: Federal Classifications
FE Federally Endangered
FC Federal Candidate for Listing

STATE (CDFW): State Classifications
SE State Endangered
SPE State Proposed Endangered
SSC State Species of Special Concern
WL California Watch List
SFP State Fully Protected

Occurrence:
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, but absence cannot be ruled out.
- Potential to occur – The species has a potential to occur onsite based on suitable habitat, but its presence/absence could not be confirmed.
- Present – The species was detected onsite incidentally or through focused surveys.

As identified by Table 5.4-7, the following special status wildlife species were not detected on site but have the potential to occur within or adjacent to the project site.

- **Coast Horned Lizard** (*Phrynosoma blainvillii*). The coast horned lizard is designated as a CDFW SSC, but is not federally or state listed. The coast horned lizard was not observed during many hours of surveys but has limited potential to occur on portions of the project site east of Valencia Avenue within areas of coastal sage scrub.

- **Coastal Whiptail** (*Aspidoscelis tigris stejnegeri*). The coastal western whiptail does not have a federal or state designation, but this species is considered locally rare. The coastal whiptail is known to occur in the general vicinity of the project site. This species has low potential to occur on site within the proposed development area and a moderate to high potential to occur in avoided scrub areas west, north, and east of the development areas.

- **Orange-Throated Whiptail** (*Aspidoscelis hyperythra*). The orange-throated whiptail is a CDFW SSC. This species has a low potential to occur within the project site.

- **Red Diamond Rattlesnake** (*Crotalus ruber*). The northern red diamond rattlesnake is designated a CDFW SSC but is not federally or state listed. The northern red diamond rattlesnake was not detected during surveys and has low potential to occur on the site.

- **Burrowing Owl** (*Athene cunicularia*). Focused surveys for the burrowing owl, a CDFW SSC, were conducted in all suitable habitat areas on the project site. Surveys were conducted in accordance with survey guidelines in the 2012 CDFG Staff Report on Burrowing Owl Mitigation. The species depends on the presence of ground squirrels, whose burrows are used for nesting and roosting. The burrowing owl prefers primarily open areas with short vegetation and bare ground. Portions of the project site west of Valencia Avenue exhibit disturbed, sparse vegetation, providing habitat relatively suitable for the species. However, the protocol surveys did not detect this species, which does not occur on the project site.

- **Coastal Cactus Wren** (*Campylorhynchus brunneicapillus sandiegensis*). The coastal cactus wren is a CDFW SSC. It is a resident species in arid regions in Southern California and has restricted habitat requirements in stands of cholla and prickly pear. This species was not detected during focused surveys in 2017 or 2018 and does not occur on the site.

- **Southern California Rufous-Crowned Sparrow** (*Aimophila ruficeps canescens*). The southern California rufous-crowned sparrow is a CDFW Watch List species. This subspecies of the rufous-crowned sparrow is a resident species of southern California on the slopes of the Transverse and Coastal ranges from Los Angeles County south to Baja California Norte, and occurs on grass-covered hillsides, coastal sage scrub, and chaparral. Southern California rufous-crowned sparrow was not detected during surveys in 2017 or 2018 and does not occur on the site.

- **White-Tailed Kite** (*Elanus leucurus*). The white-tailed kite is designated a California Fully Protected Species. The white-tailed kite inhabits low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Riparian areas adjacent to open areas are used for nesting. The winter habitat

is generally similar to the breeding habitat, but the proximity to nest trees is not important. The white-tailed kite has been reported historically in the general vicinity of the project site. The project site, including development areas, provides suitable foraging habitat. The white-tailed kite may potentially nest to the west and/or east of the project site boundary.

- **Yellow-Breasted Chat** (*Icteria virens*). The yellow-breasted chat, which is a CDFW SSC, is a migratory songbird that breeds in riparian habitats in southern California. This species exhibits habitat requirements similar to the least Bell's vireo. Suitable habitat typically consists of multilayered riparian scrub or willow woodland corridors along flowing streams. This species does not have potential to nest on site; however, it has a low potential to forage onsite.

- **Special Status Bats**. Focused surveys were conducted for roosting and foraging special-status bats. Species detected acoustically foraging or flying over the site included the Mexican free-tailed bat (*Tadarida brasiliensis*) and canyon bat (*Parastrellus hesperus*). Additionally, one recording of an unidentified bat species in the 40 kilohertz frequency was detected. Though the project site supports numerous blue-gum eucalyptus trees, which are often used by certain bat species for roosting (within areas of exfoliating bark), roosting on site was not detected. Specifically, careful examination of the eucalyptus trees found very few large trees with areas of exfoliating bark that would be suitable for roosting.

Regional Connectivity and Wildlife Movement Corridors

Wildlife corridors link areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will likely not persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information.

The project site is west of Carbon Canyon Regional Park and Chino Hills State Park and south of the Puente-Chino Hills wildlife corridor. The project site is not identified as a potential corridor segment for the Puente-Chino Hills wildlife corridor or as a habitat linkage contributing to Chino Hills State Park. Based on the extent of adjacent high-density residential development along the north, south, and west boundaries and associated high traffic roadways bisecting and bordering the property, the project site does not meet the definition for and is not expected to serve as a wildlife movement corridor for ground-dwelling species.

Habitat Conservation Plan

The project site is not within or adjacent to an existing or proposed Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), including the NCCP/HCP Central and Coastal Subregion of Orange County.

5.4.2 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:

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 Wildlife 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 Wildlife or U.S. Fish and Wildlife Service.

B-3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

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.

All six impacts will be addressed in the following analysis.

5.4.3 Plans, Programs, and Policies

Regulatory Requirements

PPP BIO-1 Potential direct/indirect impacts to common and sensitive bird and raptor species will require compliance with the California Fish and Game Code Section 3503. Construction outside the nesting season (between September 1st and January 31st) does not require preremoval nesting bird surveys. If construction is proposed between February 1st and August 31st, a qualified biologist must conduct a nesting bird survey(s) no more than 14 days prior to initiation of grading to document the presence or absence of nesting birds within or directly adjacent (100 feet) to the project site.

The survey(s) will focus on identifying any raptors and/or bird nests that are directly or indirectly affected by construction activities. If active nests are documented, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of a nest shall be postponed until the

young birds have fledged. The perimeter of the nest setback zone shall be fenced or adequately demarcated with stakes and flagging at 20-foot intervals, and construction personnel and activities restricted from the area. A survey report by a qualified biologist verifying that no active nests are present, or that the young have fledged, shall be submitted to the City of Brea for review and approval prior to initiation of grading in the nest-setback zone.

The qualified biologist shall serve as a construction monitor during periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur. A final monitoring report of the findings, prepared by a qualified biologist, shall be submitted to the City of Brea documenting compliance with the California Fish and Game Code. Any nest permanently vacated for the season would not warrant protection pursuant to the California Fish and Game Code.

PPP BIO-2 The proposed project is required to plant and maintain street trees in accordance with the City of Brea Municipal Code Chapter 12.20, Street Trees.

PPP BIO-3 The proposed project is required to comply with the California Building Code and all other applicable laws, rules, and regulations governing grading in the City of Brea.

PPP BIO-4 The proposed project will implement Design Guidelines and Development Regulations and Standards. All subsequent development within the Specific Plan area is required to conform with the provisions discussed in the design and development sections.

PPP HYD-2 The project applicant will obtain a Section 408 Permit from the U.S. Army Corps of Engineers to replace the Carbon Canyon Channel with a covered, reinforced concrete box to allow for construction of the new intersection at Rose Drive and Vesuvius Drive, build internal project streets, and complete Rose Drive according to the Master Plan of Arterial Highways.

5.4.4 Environmental Impacts

5.4.4.1 METHODOLOGY

To establish existing conditions for biological resources and determine how the proposed project may impact such resources, a literature review, review of jurisdictional resources, and field surveys were conducted. The field surveys included general surveys and focused surveys. Focused surveys were conducted for bats, the coastal California gnatcatcher, and burrowing owls.

FESA prohibits the "taking" of a member of an endangered or threatened wildlife species or removing, damaging, or destroying a listed plant species by any person (including private individuals and private or government entities). FESA defines "take" as "to harass, harm, pursue, hunt, shoot, would, kill, trap, capture or collect" an endangered or threatened species, or to attempt to engage in these activities.

5.4.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.4-1: The proposed project could have a substantial effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. [Threshold B-1]

Sensitive Vegetation Communities Impact

Table 5.4-9, *Vegetation Communities Impacts*, summarizes the direct impacts to the vegetation communities on site. Figure 5.4-6, *Vegetation Communities Impact Map*, shows the locations of these plant communities. Table 5.4-9 shows that 248.33 acres of vegetation communities, including 7.15 acres of onsite fuel modification zones (FMZ) would be directly impacted by implementation of the proposed project.

Table 5.4-9 Vegetation Communities Impacts

Vegetation Communities	Permanent Grading Impacts (ac)	Permanent FMZ Impacts (ac)	Open Space (ac)	Total (ac)
Coastal Sage Scrub Habitats				
California sagebrush scrub	7.43	0.44	1.97	9.84
California buckwheat scrub	1.04	1.03	0.87	2.94
Coyote brush scrub	0.34	--		0.34
Coast prickly pear scrub	0.12	0.08	0.07	0.27
Brittle bush scrub	0.05	--	--	0.05
Chaparral Habitats				
Laurel sumac scrub	16.86	--	0.13	16.99
Woodland and Savannah Habitats				
Blue elderberry savannah	2.56	--	--	2.56
Blue elderberry stands	1.50	0.01	0.04	1.54
Blue elderberry woodland	1.37	--	0.05	1.37
Walnut Grove Habitats				
California black walnut grove	--	--	0.07	0.07
Riparian Habitats				
Mule fat thickets	0.11	--	--	0.10
Black Willow thickets	0.03	--	--	0.03
Nonnative Grassland Habitats				
Red brome or Mediterranean grass grasslands	16.34	--	--	16.38
Ruderal Habitats				
Upland mustards	31.71	0.31	1.67	36.48
Russian thistle stands	17.83		0.17	18.01
Filaree fields	5.10	--	--	5.10
Poison hemlock or fennel patches	0.85	--	0.05	0.90
Castor bean thickets	0.85	--	--	0.85

Table 5.4-9 Vegetation Communities Impacts

Vegetation Communities	Permanent Grading Impacts (ac)	Permanent FMZ Impacts (ac)	Open Space (ac)	Total (ac)
Yellow star-thistle fields	0.30	--	--	0.30
Fountain grass swards	0.06	--	--	0.06
Ornamental Habitats				
Pepper tree groves	7.46	0.35	0.24	8.05
Eucalyptus groves	6.70	0.12	0.04	6.86
Pepper tree or laurel sumac groves	3.13	--	--	3.13
Pepper tree individuals	1.47	0.21	0.08	1.83
Giant reed breaks	0.17	--	--	0.17
Other ornamental	0.07	--	--	0.07
Mexican fan palm	0.03	--	--	0.03
Tree of heaven groves	0.01	--	--	0.01
Developed / Disturbed				
Oil field roads and pads	82.49	0.97	0.30	83.76
Agriculture	27.71	--	--	27.71
Developed	9.18	0.53	1.05	10.77
Active nursery	4.61	--		4.61
Bare	0.67	0.27	0.43	1.37
Concrete flood control channel	0.11	0.02	0.03	0.16
Total	**248.33**	**7.15**	**7.21**	**262.70**

Source: Cadre 2019.

Of the vegetation communities in Table 5.4-9, four habitats are identified as special-status vegetation (see Table 5.4-2):

- Southern California Black Walnut Woodland
- Blue Elderberry Stands (not listed in the CNDDB for the subject quadrangles)
- Goodding's Black Willow Forest (not listed in the CNDDB for the subject quadrangles)
- Coast Prickly Pear (not listed in the CNDDB for the subject quadrangles)

Southern California Black Walnut Grove.: The project site contains 0.07 acre of walnut grove in the northeastern area of the project site east of Valencia Avenue. Walnut groves have a state rarity rank of S3. As shown on Figure 5.4-6, *Vegetation Communities Impact Map*, the black walnut grove is outside of the area to be graded and would not be disturbed by the proposed project through grading or fuel modification. Therefore, impacts to the black walnut grove would be less than significant.

Black Willow Thickets. The proposed project would impact approximately 0.03 acre of black willow thickets. Black willow thickets have a state rarity ranking of S3 (i.e., rare to uncommon). They are fully surrounded by a matrix of upland mustards, eucalyptus groves, and nonnative Mexican fan palms and thus do not exhibit functions typically associated with black willow forest. However, the CDFW considers impacts to alliances of S3 to be significant. Black willow thickets are within the northern reach of Drainage B, and impacts would be potentially significant.

Coast Prickly Pear Scrub. The area to be permanently graded by the proposed project includes approximately 0.12 acre of coast prickly pear scrub. Coast prickly pear scrub has a state rarity ranking of S3, rare to common. Because all coastal prickly pear occurs in small, scattered patches and is not associated with areas of native scrub habitat, impacts would be considered less than significant. Furthermore, approximately 0.08 acre of coast prickly pear scrub in FMZ would not be disturbed by the proposed project because cactus is permissible in FMZs. Therefore, impacts to coast prickly pear scrub habitat would be less than significant.

Blue Elderberry Woodlands. The proposed project would impact 1.37 acres of blue elderberry woodlands, which has a state rarity ranking of S3, rare to uncommon. The CDFW considers impacts to alliances of S3 to be significant; thus, impacts to 1.37 acres of blue elderberry would be potentially significant.

Sensitive Plants Impact

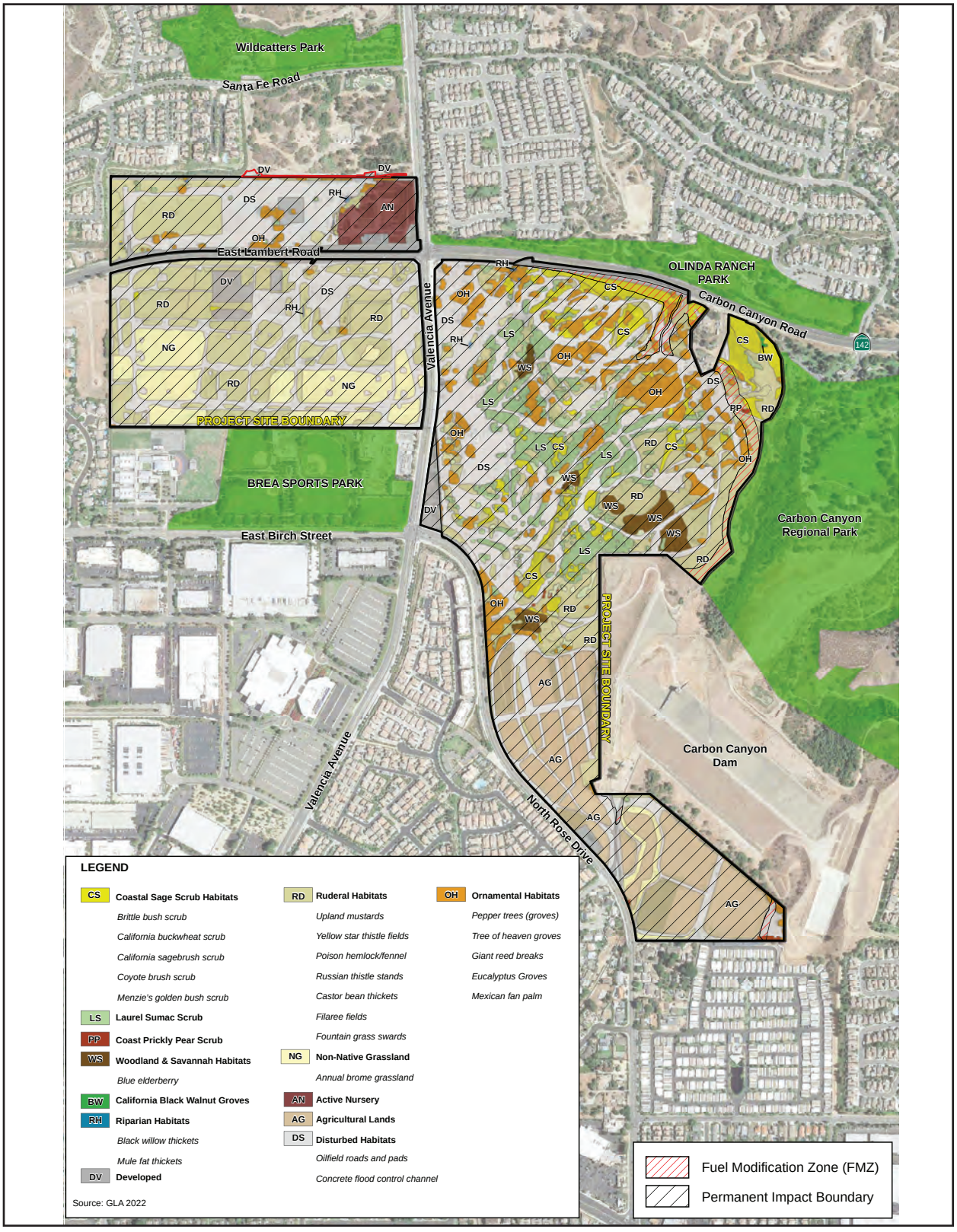
The proposed project would impact 126 Southern California black walnut plants, a special-status species, which is scattered across the northeastern portion of the project site east of Valencia Avenue (see Figure 5.4-5, *Sensitive Floral Species Observations Map*). On the northeastern edge of the project site, east of Valencia Avenue, 0.07 acre consists of a southern California black walnut grove. The California black walnut has a CRPR ranking of 4.2. The CRPR ranking of 4 refers to species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat (CRPR 4), and the threat rank of 0.2 refers to species that are fairly threatened in California (i.e., 20 to 80 percent occurrences threatened/moderate degree and immediacy of threat) (CNPS 0.2). However, direct impacts to the Southern California black walnut would be considered less than significant because 1) except for black walnut trees within 0.07 acre of walnut woodland, which would not be impacted, individual black walnut trees are commonly associated with disturbed habitat and areas of nonnative vegetation and do not exhibit functions that are typically associated with walnut woodland; 2) the black walnut tree has a CRPR ranking of 4, which is still common throughout its range; and 3) the black walnut tree is not locally rare, and the adjacent Chino Hills and nearby Puente and Whittier Hills, much of which is dedicated open space, support large numbers of California walnuts, ensuring that the population in north Orange County and adjacent areas of Los Angeles County are sustainable. Therefore, the loss of 126 walnut trees within the project site would not result in a substantial adverse impact to this species. Impacts would be less than significant.

Sensitive Wildlife Impact

The proposed project would directly impact the coastal California gnatcatcher, and it exhibits potential for impacts to the least Bell's vireo, yellow warbler, California horned lark, and Cooper's hawk. Figure 5.4-2, *Sensitive Faunal Species Observations Map*, show sighting of these sensitive animal species onsite.

Figure 5.4-6 - Vegetation Communities Impact Map

5. Environmental Analysis



Offsite Impact Area

0 1,000
Scale (Feet)

Source: CADRE Environmental, 2022

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Coastal California Gnatcatcher. Two breeding pairs of coastal California gnatcatchers were detected on-site during focused surveys in 2018, as shown on Figure 5.4-2 and described in Section 5.4.1.3 under "Sensitive Wildlife." Coastal California gnatcatcher is a federally threatened and state species of special concern. Table 5.4-3 shows a 13.18 acres of PBF1 habitat and 44.24 acres of PBF2 habitat for a total of 57.42 acres of PBFs within the Critical Habitat. As shown in Table 5.4-10, *Impacts to CAGN Critical Habitat PBFs*, the proposed project would impact approximately 10.33 acres of suitable coastal scrub habitat that constitute PBF1 and 42.53 acres of other non-sage scrub habitats (grassland, blue elderberry, laurel sumac scrub, mulefat thickets, and upland thickets) that constitute PBF2, which are in close proximity to the coastal California gnatcatcher observations on-site. Although there are small, isolated patches of scrub alliances, such as coyote brush scrub and cactus scrub totaling 0.18 acre, they are in areas completely unsuitable for the coastal California gnatcatcher, are not within the critical habitat overlay, and are not included in the impacts for the gnatcatcher. Impacts to 10.33 acres of coastal California gnatcatcher habitat, including potential breeding and foraging resources, would be potentially significant.

Table 5.4-10 Impacts to CAGN Critical Habitat PBFs

Vegetation Alliance	PBF1 (acres)	PBF2 (acres)
Annual brome grassland	--	0.07
Blue elderberry (savannah)	--	2.56
California brittle bush scrub	0.05	--
California buckwheat scrub	2.07	--
California sagebrush scrub	7.87	--
Coast prickly pear scrub	0.11	--
Coyote brush scrub	0.23	--
Laurel sumac scrub	--	16.63
Mulefat thickets	--	0.02
Upland mustards	--	23.25
Subtotal	**10.33**	**42.53**
Total Area Impacted	**10.33 + 42.53 = 52.86 acres**	

Least Bell's Vireo. Sightings of the least Bell's vireo were detected within the project site during protocol coastal California gnatcatcher surveys in 2018, as shown on Figure 5.4-2 and described in Section 5.4.1.3 under "Sensitive Wildlife." The least Bell's vireo is a state and federally listed endangered species. Based on the observation of this species on the project site, impacts would be potentially significant.

Yellow Warbler. The yellow warbler is a state species of special concern. The yellow warbler was documented foraging on the project site near the southwest corner of the parcel east of Valencia Avenue, as shown on Figure 5.4-2 and described in Section 5.4.1.3 under "Sensitive Wildlife." Suitable habitat typically consists of multilayered riparian scrub or willow woodland corridors along flowing streams. The project's potential impacts to nesting habitat for the yellow warbler would be less than significant level with compliance with regulatory requirements of California Fish and Game Code Section 3503, as identified in PPP BIO-1.

California Horned Lark. The California horned lark is a CDFW Watch List species. The California horned lark was observed foraging within the grassland portions of the project site. Potential impacts to California

horned lark would be less than significant with compliance with regulatory requirements of California Fish and Game Code Section 3503, as identified in PPP BIO-1.

Cooper's Hawk. Cooper's hawk is a CDFW Watch List species when nesting. Cooper's hawk was observed foraging within the project site, and the mature eucalyptus trees represent suitable nesting habitat. Potential impacts to Cooper's hawk would be less than significant with compliance with the regulatory requirements of California Fish and Game Code Section 3503, as identified in PPP BIO-1.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.4-2: The proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; and could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. [Thresholds B-2 and B-3]

Wetland Impact

The project site contains no jurisdictional wetlands as defined under Section 404 of the Clean Water Act or under definitions in the Fish and Game Code or the State Water Board's wetland procedures. There would be no significant impacts on wetlands.

Jurisdictional Resources Impact

As shown in Table 5.4-11, *USACE/RWQCB Jurisdictional Resources Impact*, and discussed in Section 5.4.1.3 under "Jurisdictional Water and Wetlands," the project site contains 0.651 acre of USACE/RWQCB jurisdictional resources, and the proposed project would impact 0.602 acre of the total resource area. Figure 5.4-3, *USACE/RWQCB Jurisdictional Resources Map*, depicts the USACE/RWQCB jurisdictional drainage locations, and the proposed project would impact all of Drainages A through C, and 0.11 acre of Drainage D. Figure 15 in the Biological Resources Technical Report, "USACE/RWQCB Jurisdictional Resources Impact Map" (see Appendix D), shows drainage areas to be impacted by the proposed project. Impacts to these USACE/RWQCB jurisdictional resources would be potentially significant without mitigation, and a CWA Section 404 permit and a 401 Certification would be required prior to impacting these resources. Additionally, as required under PPP HYD-2, the project applicant will obtain a Section 408 Permit from the USACE to make alterations to the Carbon Canyon Channel (Drainage D) with a covered, reinforced concrete box.

Table 5.4-11 USACE/RWQCB Jurisdictional Resources Impact

		Existing Condition		Impacted Acreage	
Drainage Feature	Type	Acres	Linear Feet	Acres	Linear Feet
Drainage A	Nonwetland Channel	0.363	2,422	0.363	2,422
Drainage B	Nonwetland Ephemeral Channel	0.043	241	0.043	241
Drainage C	Nonwetland Ephemeral Channel	0.086	1,149	0.086	1,149
Drainage D	Concrete Ephemeral Channel	0.159	687	0.11	447
	Total	**0.651**	**4,499**	**0.602**	**4,259**

As shown in Table 5.4-12, *CDFW Jurisdictional Resources Impact*, the project site contains 1.055 acres of CDFW jurisdictional resources, which includes 0.992 acre of nonriparian streambed and 0.063 acre of riparian habitat. Figure 5.4-4, *CDFW Jurisdictional Resources Map*, depicts the CDFW jurisdictional drainage locations. The proposed project would impact 1.006 acres of CDFW jurisdictional resources, consisting of all of Drainages A through C and 0.11 acre of the concrete channel (Drainage D). Impacts on the 0.11-acre concrete channel would not be considered significant because there are no streambed resources associated with it. Therefore, the proposed project would have potentially significant impacts to 0.896 acre of streambed, of which 0.63 acre consists of riparian habitat. Figure 16 of the Biological Resources Technical Report, "CDFW Jurisdictional Resources Impact Map" (see Appendix D), shows the impacted areas. Impacts to these CDFW jurisdictional resources would be potentially significant without mitigation, and a 1602 Streambed Alteration Agreement from CDFW would be required prior to impacting these resources.

Table 5.4-12 CDFW Jurisdictional Resources Impact

Drainage Feature	Existing Condition				Impacted Acreage			
	Non-Riparian Streambed	Riparian	Total Acres	Linear Feet	Non-Riparian Streambed	Riparian	Total Acres	Linear Feet
Drainage A	0.699	0.032	0.731	2,422	0.699	0.032	0.731	2,422
Drainage B	0.048	0.031	0.079	241	0.048	0.031	0.079	241
Drainage C	0.086	0.00	0.086	1,149	0.086	0.00	0.086	1,149
Drainage D	0.159	0.00	0.159	687	0.11	0	0.11	474
Total	**0.992**	**0.063**	**1.055**	**4,499**	**0.943**	**0.063**	**1.006**	**4,286**

Coastal California Gnatcatcher Critical Habitat Impact

The proposed project would impact areas within Critical Habitat Unit 9, a sensitive natural community designated for the coastal California gnatcatcher by the USFWS. Areas within Critical Habitat Unit 9 provide for movement/dispersal opportunities along a roughly east-to-west axis between the Chino Hills and Puente Hills. The project site and associated critical habitat provides limited potential for dispersal due to existing development and the major roadway intersection of Valencia Avenue and Lambert Road immediately to the northwest of the critical habitat. The area more suitable for CAGN dispersal within the area of designated critical habitat is to the north of the project site, as depicted on Figure 5.4-7, *Regional Open Space and Proposed Mitigation Lands Map*. As discussed in Impact 5.4-1 under Coastal California Gnatcatcher impact and summarized in Table 5.4-10, the proposed project would impact 10.33 acres of PBF1 and 42.53 acres of PBF2, totaling 52.86 acres within Critical Habitat Unit 9. Impacts to the 52.86 acres of coastal California gnatcatcher critical habitat would be potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.4-3: The proposed project could interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. [Threshold B-4]

Wildlife Corridor

As discussed in Section 5.4.1.2, *Existing Conditions,* the project site is not in a designated wildlife corridor or linkage. The project site is adjacent to residential development along the north, south, and west boundaries. Additionally, high traffic roadways bisect and border the project site. The project site does not meet the definition of a wildlife movement corridor, nor is it expected to serve as one for ground-dwelling species.

However, the project site is partially within Critical Habitat Unit 9, designated for the coastal California gnatcatcher by the USFWS. As discussed under Impact 5.4-2, 52.86 acres of critical habitat representing PBFs would be impacted by the proposed project. Therefore, implementation of the proposed project could interfere with the movement of the coastal California gnatcatcher, and such impacts would be potentially significant.

Nesting Birds

The proposed project has the potential to impact active bird and raptor nests if vegetation is removed during the nesting season, which generally extends from February 1st to August 31st. However, migratory, nongame, native bird species are protected by the MBTA and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800. PPP BIO-1 requires that the proposed project avoid the incidental loss of fertile eggs or nestlings or other activities that could lead to nest abandonment; therefore, preconstruction surveys would be conducted prior to removal of nesting habitat if construction-related vegetation removal occurs during nesting season (February 1 to August 31). Implementation of PPP BIO-1 would reduce impacts to nesting birds to a less than significant level.

Level of Significance Before Mitigation: Potentially significant impact.

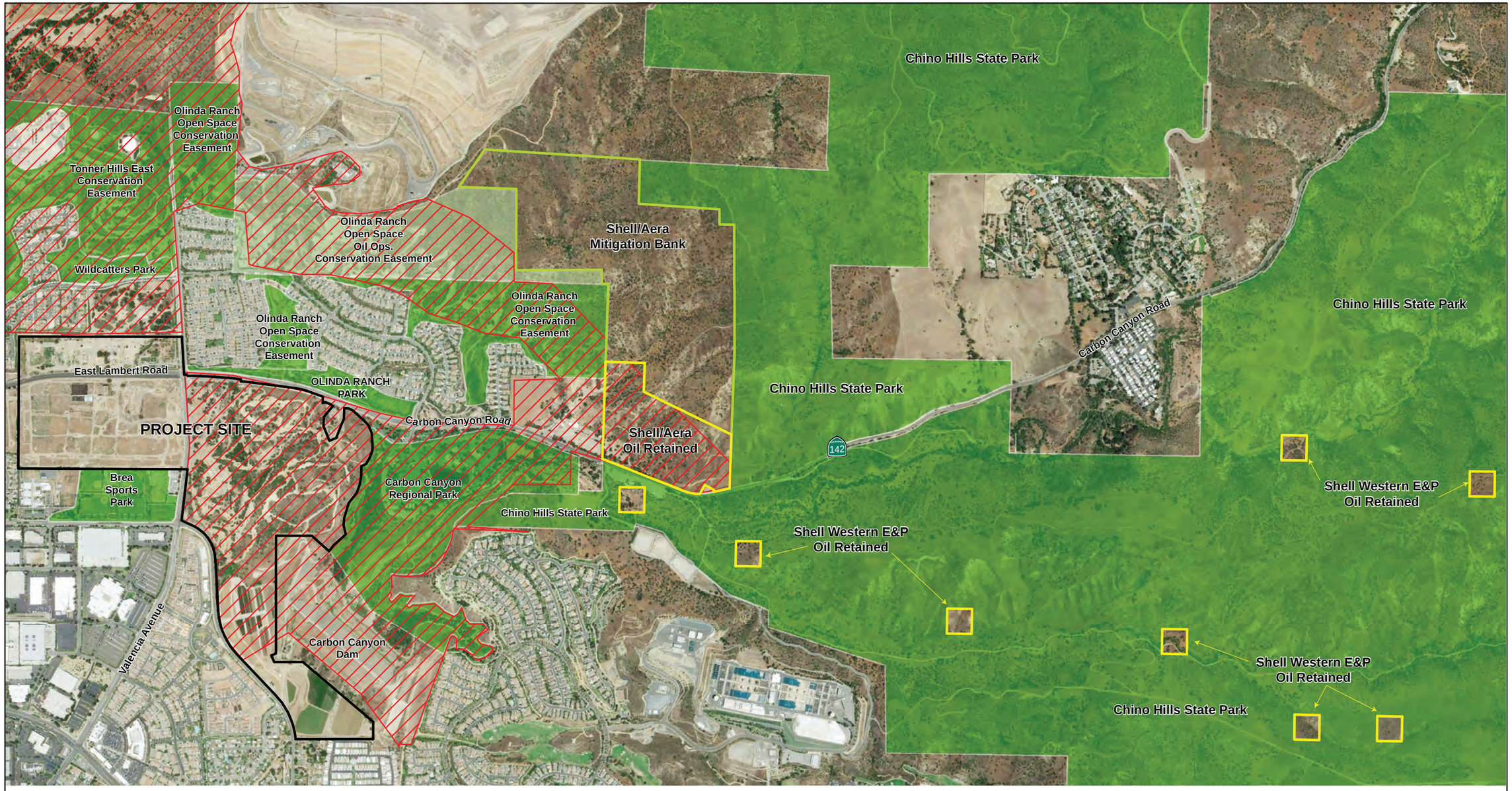
Impact 5.4-4: The proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. [Thresholds B-5]

Consistency with Local Biological Resources Policies

The proposed project is in the City of Brea and unincorporated Orange County. However, after approval of Brea 265 Specific Plan and the Development Agreement, the 219.1 acre portion of the project area that is currently within the City's SOI would be annexed into the City, consistent with the 2005 preannexation agreement. At that time, the proposed project would be subject to Brea's policies and ordinances.

The community resources element of the City's General Plan provides provisions for open space and biological resources. Table 5.4-13, *Consistency Analysis with General Plan Community Resources Element*, analyzes the project's consistency with the General Plan.

Figure 5.4-7 - Regional Open Space and Proposed Mitigation Lands Map
5. Environmental Analysis



Source: CADRE Environmental, 2022

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Table 5.4-13 Consistency Analysis with General Plan, Community Resources Element

Goals / Policies	Consistency Analysis
▪ **Goal CR-4:** Preserve open space aggressively for diverse purposes – as a visual and scenic resource, for habitat conservation, to protect watersheds, and for recreation. • **Policy CR-4.1.** Protect and preserve open space wherever possible. • **Policy CR-4.2.** Select areas for open space preservation using an evaluation system that incorporates the following selection criteria: connectivity, access/recreations, sensitive areas, natural features, subdivision pattern, and buffer zones. • **Policy CR-4.3.** Work aggressively with the Orange County, Los Angeles County, State, and other appropriate public agencies, private entities, and landowners to conserve, protect, and enhance open spaces and natural resources, particularly within the sphere of influence.	***Consistent:*** The proposed project would provide 47.5 acres of open space and an additional 15.1 acres of land as parks and recreation space onsite. Although the project site does support sensitive habitat in undeveloped areas onsite, the project site is currently zoned HR (Hillside Residential) and R-1 Single-Family Residential, and is not zoned for open space. The proposed project would protect and preserve open space wherever possible for diverse purposes.
▪ **Goal CR-8:** Preserve and maintain wildlife and animal movement corridors • **Policy CR-8.1.** Preserve key wildlife migration corridors and habitat areas. • **Policy CR-8.2:** Provide adequate wildlife crossings where roadways have severed habitat areas. • **Policy CR-8.3.** Cooperate with regional agencies and authorities with similar goals in protecting and enhancing wildlife and animal movement corridors. • **Policy CR-8.4.** Regular monitoring of medium and large mammals is necessary to gauge the effective ness of wildlife corridors and to identify or increases in wildlife populations.	***Inconsistent:*** As discussed under Impact 5.4-4, the project site is not within an identified wildlife corridor nor is the project site a habitat linkage. However, the project site is in Critical Habitat Unit 9 for the coastal California gnatcatcher. Therefore, the proposed project may conflict with the City's community resources element.
▪ **Goal CR-9:** Preserve and maintain open space, natural habitat, and vegetation communities that support wildlife species and animals. • **Policy CR-9.1.** Support regional and sub-regional efforts to acquire, develop, operate, and maintain an open space system extending from the Puente Hills to the Chino Hills. • **Policy CR-9.2.** Preserve the integrity of blue line streams and riparian habitat areas. • **Policy CR-9.3.** Preserve and restore the habitat value of creek corridors though the preservation of native plants and the replacement of invasive, non-native plants with native plants. • **Policy CR-9.4.** Protect sensitive plant species resources from the impacts of development • **Policy CR-9.5.** Manage areas of diverse wildlife habitat as a natural resource and prevent major destruction or disruption. • **Policy CR-9.6.** Use specific management programs using sound ecological principles and professionally accepted methods are necessary to protect and restore sensitive animal populations and their habitats.	***Inconsistent:*** The project site is currently designated Hillside Residential and Low Density Residential, and zoned HR (Hillside Residential) and R-1 Single-Family Residential. It is not designated as open space. However, the implementation of the proposed project may impact open space, natural habitat, vegetation communities, sensitive flora and fauna, and USACE, RWQCB, and CDFW resources, as discussed in Impacts 5.4-1 through 5.4-4, if not mitigated. Therefore, the proposed project may conflict with the City's community resources element.

Sources: City of Brea General Plan Community Resources Element; Brea 265 Specific Plan, 2019.

As described in Table 5.4-13, the proposed project would be inconsistent with some of the General Plan policies protecting biological resources, and impacts would be potentially significant.

Tree Preservation Ordinance

The proposed project is required to plant and maintain street trees in accordance with the City of Brea Municipal Code Chapter 12.20, Street Trees (PPP BIO-2). There is no other tree preservation policy applicable to the proposed project.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.4-5: The proposed project would not conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. [Thresholds B-6]

The project site is not within an adopted HCP nor NCCP. However, a 141.40-acre portion of the project site east of Valencia Avenue is in Critical Habitat Unit 9 for the coastal California gnatcatcher, as depicted in Figure 5.4-2, *Sensitive Faunal Species Observations Map*. The area designated critical habitat consists of an active oil field that supports a predominance of nonnative trees, including blue gum eucalyptus and Peruvian pepper, mixed with laurel sumac chaparral and limited areas of coastal sage scrub. The project site also contains substantial areas devoted to oil production activities, including unvegetated roads and pads. The portion of the project site designated critical habitat is bordered on the north by existing residential development and Valencia Avenue, and former nursery lands to the west that support nonnative grasses and forbs as well as residential and institutional lands west of Valencia Avenue. Areas to the south of the critical habitat include active agricultural areas (some of which are in the critical habitat overlay) and residential development. To the east is Carbon Canyon Regional Park and USACE-owned land associated with Carbon Canyon Dam that supports very limited areas of coastal sage scrub habitat. The project site has been used for oil extraction for more than 100 years, and with or without the proposed project, abandonment and remediation of the oil production facilities would unavoidably have impacts to the habitat. Implementation of the proposed project would provide a method to accelerate restoration through mitigation that otherwise would not be possible for a long time.

As discussed in Impact 5.4-1 and Impact 5.4-2, of the 141.40 acres of critical habitat, 83.98 acres (59.39 percent) do not contain PBFs, and 57.42 acres (40.61 percent) contain PBFs. Table 5.4-3, *Coastal California Gnatcatcher PCE Assessment*, provides a detailed breakdown of the 141.40 acres of critical habitat. And as summarized in Table 5.4-10, the project would impact 10.33 acres of PBF1 and 42.53 acres of PBF2, totaling 52.86 acres. Impacts to the 52.86 acres of coastal California gnatcatcher critical habitat would be potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

5.4.5 Cumulative Impacts

The geographical area for cumulative analysis would encompass areas near the Chino Hills State Park and the Puente-Chino Hills wildlife corridor area, which includes the related cumulative projects list identified in Table 4-1, *Related Cumulative Projects*. Implementation of the proposed project could result in site-specific impacts to sensitive flora and fauna species, sensitive vegetation communities, critical habitat designated for coastal California gnatcatcher, and jurisdictional waters. Similar to the proposed project, each cumulative project would be reviewed on a case-by-case basis for its impact on biological resources and would be expected to comply

with existing regulations and local and regional plans, ordinances, and policies protecting biological resources, as listed in PPP BIO-1 through PPP BIO-3. Based on a review of USFWS's critical habitat map, none of the related projects are within critical habitat for the coastal California gnatcatcher (USFWS 2019), in the identified wildlife corridor, or in habitat linkage for the Puente-Chino Hills Wildlife Corridor and Chino Hills State Park. Although project-related biological resources could be cumulatively significant—because overall conversion of undeveloped natural habitats to urban uses could result in decrease of availability of open space—implementation of mitigation measures for each project would ensure that individual project impacts are reduced to a less than significant level, and none of the cumulative projects are in close enough proximity to combine with the proposed project to create a cumulative impact on biological resources.

5.4.6 Level of Significance Before Mitigation

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

- **Impact 5.4-1**: Buildout of the proposed project may impact the two sensitive vegetation communities (Black Willow Thickets and Blue Elderberry Woodlands) and two sensitive wildlife species—coastal California gnatcatcher and least Bell's vireo.
- **Impact 5.4-2:** The proposed project could result in the loss 0.602 acre of USACE/RWQCB jurisdictional resources and 1.006 acres of CDFW jurisdictional resources.
- **Impact 5.4-3:** The proposed project could affect wildlife movement of the coastal California gnatcatcher.
- **Impact 5.4-4:** The proposed project may be inconsistent with General Plan policies protecting biological resources.
- **Impact 5.4-5:** The proposed project would impact USFWS critical habitat for coastal California gnatcatcher.

5.4.7 Mitigation Measures

Impact 5.4-1

BIO-1 The project applicant shall provide a minimum of 52.86 acres of open space lands offsite within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor as determined by the U.S. Fish and Wildlife Service, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park. The proposed land conservation shall be offered to the Chino Hills State Park for consideration of acquisition. See Figure 5.4-7, *Regional Open Space and Proposed Mitigation Lands Map*.

BIO-2 A Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) or Biological Opinion pursuant to Section 7 shall be developed as part of formal consultation with the US Fish and Wildlife Service (USFWS) for

impacts to 10.33 acres of occupied and suitable coastal California gnatcatcher habitat. Upon development of the HCP or completion of the Section 7 consultation and issuance of the Biological Opinion, the USFWS can issue incidental take permits for listed species where the HCP or Biological Opinion specifies, at a minimum, the following:

(1) The level of impact that will result from the taking, (2) Steps that will minimize and mitigate the impacts, (3) Funding necessary to implement the plan, (4) Alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) Such other measures that the USFWS may require in accordance with the HCP or the Biological Opinion, as applicable.

The project applicant shall perform the following restoration activities offsite within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor, as determined by the U.S. Fish and Wildlife Service, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO 1:

- Coastal Sage Scrub Establishment/Restoration (10.33 acres mitigated at 2:1 ratio): 20.66 acres
- Prepare Habitat Restoration Plan that will include the following components—Location, Site Preparation Methods, Plant Palette, Planting Methods, Maintenance Requirements, Monitoring and Reporting Procedures, Performance Standards.

The project applicant shall begin coastal sage scrub restoration activities (e.g., soil prep, seeding) no later than one year after issuance of the first permit that allows for ground disturbance (e.g., grading permit).

It is expected that the USFWS will include monitoring requirements to ensure nesting activities are not directly or indirectly impacted as a result of project initiation. The take of active coastal California gnatcatcher nests, which includes harassment of the bird due to grading noise and vibrations, is not permitted from February 15 through July 1. Therefore, grading and removal of habitat during this time frame shall only be permitted if the following conditions are met to the satisfaction of the USFWS.

- During grading, if active nests are found within 500 feet of the grading, the grading activity shall be stopped until such time as mitigation measures are implemented to the satisfaction of the USFWS. There is no guarantee that grading will be allowed to resume during the nesting season.
- Before issuance of a clearing/grading permit, if grading or clearing is to occur between February 15 and July 1, the project applicant shall provide to the City of Brea a letter from a qualified biologist retained by the project applicant, with a scope of work for a coastal sage scrub habitat and coastal California gnatcatcher survey, and a report for the area to be cleared and/or graded, and coastal sage scrub habitat areas within 500 feet of that area.

The biologist shall coordinate with the USFWS to determine the appropriate survey methodology. The purpose of the survey is to determine if any active gnatcatcher nests are in the area to be cleared or graded, or in coastal sage scrub habitat within 500 feet of such an area. To be considered qualified, the biologist must provide the City with a copy of a valid Coastal California Gnatcatcher Recovery Permit from the USFWS.

The scope of work shall explain the survey methodology for the biological survey and the proposed coastal California gnatcatcher nest monitoring activities during the clearing/grading operation. Should the report show, to the satisfaction of the USFWS, that gnatcatcher nests are not present within the area to be graded/cleared, or within coastal sage scrub habitat located within 500 feet of said area, approval may be granted to commence clearing/grading within the coastal California gnatcatcher nesting season from February 15 through July 1.

- If coastal California gnatcatchers are nesting within the area to be graded/cleared, or within coastal sage scrub habitat within 500 feet of said area, no grading will be allowed during this time until mitigation measures are implemented to the satisfaction of the USFWS.
- The biologist must attend the City's preconstruction meeting for the project and must be present onsite during all clearing/grading activities to monitor that the clearing/grading activities stay within the designated limits. During this period, the biologist shall also monitor and survey the habitat within the area to be cleared/graded and any habitat within 500 feet of that area for any evidence that a coastal California gnatcatcher nest(s) exists or is being built. If evidence of a coastal California gnatcatcher nest(s) is discovered, the grading operation shall cease in that area and be directed to a location more than 500 feet from the nest(s).
- Upon completion of the clearing/grading activities, the applicant's biologist shall submit to the City of Brea and USFWS a biological monitoring report summarizing the observations of the biologist, including whether any coastal California gnatcatchers or evidence of active coastal California gnatcatcher nests were present during clearing and grading activities in the area and any habitat within 500 feet of the area.

BIO-3 A Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) or Biological Opinion pursuant to Section 7 shall be developed as part of formal consultation with the US Fish and Wildlife Service (USFWS) for impacts to 1.37 acres of least Bell's vireo habitat. Upon development of the HCP or completion of the Section 7 consultation and issuance of the Biological Opinion, the USFWS can issue incidental take permits for listed species where the HCP or Biological Opinion specifies, at a minimum, the following:

(1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5)

other measures that the USFWS or CDFW may require as being necessary or appropriate for the HCP or Biological Opinion.

The project applicant shall perform the following preservation and/or restoration activities offsite within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor as determined by the USFWS, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO-1.

- Blue Elderberry Scrub Establishment (1.37 acres mitigated at 2:1 ratio): 2.74 acres
- Prepare Habitat Restoration Plan that shall include the following components—Location, Site Preparation Methods, Plant Palette, Planting Methods, Maintenance Requirements, Monitoring and Reporting Procedures, Performance Standards.

It is expected that the USFWS will include monitoring requirements to ensure nesting activities are not directly or indirectly impacted as a result of project initiation. The take of active least Bell's vireo nests, which includes harassment of the bird due to grading noise and vibrations, is not permitted from April 14 through July 31. Therefore, grading and removal of habitat during this time frame shall only be permitted if the following conditions are met to the satisfaction of the USFWS.

- During grading, if active nests are found within 500 feet of the grading, the grading activity shall stop until mitigation measures are implemented to the satisfaction of the USFWS. There is no guarantee that grading will be allowed to resume during the nesting season.

Impact 5.4-2

See Mitigation Measures BIO-1 and BIO-2.

BIO-4 Prior to issuance of a grading permit, the project applicant shall obtain a 404 Nationwide Permit from the US Army Corps of Engineers (USACE), a 401 Certification issued by the Regional Water Quality Control Board (RWQCB), and a 1602 Streambed Alteration Agreement (SAA) from the California Department of Fish and Wildlife (CDFW) for impacts to jurisdictional resources. During the permit/certification processes, a Regulatory Habitat Mitigation Monitoring Plan (HMMP) shall be developed and approved by USACE, CDFW, and RWQCB, as outlined in the HMMP.

Total impact area that requires mitigation by 404 Nationwide Permit from USACE and 401 Certification from RWQCB shall not be less than 0.602 acre. And total impact area subject to Section 1602 SAA by CDFW mitigation shall not be less than 0.896 acre (0.833 acre of drainage channel and 0.063 acre of riparian habitat). Total impact area subject to Section 1602 SAA is inclusive of the USACE/RWQCB impact area; therefore, mitigation for Section 1602 impacts also address the impacts to USACE/RWQCB jurisdictional resources.

Impacts to jurisdictional resources shall be mitigated at a ratio greater than 3:1 (0.896 acre mitigated at 3:1 ratio is 2.688 acres). The project applicant shall establish and/or reestablish 2.74 acres of streambed and associated blue elderberry woodland as outlined in Mitigation Measure BIO-3. The 2.74 acres will collectively mitigate impacts to 0.896 acre of jurisdictional resources, 1.37 acres of blue elderberry woodland, and 0.03 acre of black willow thicket at a location approved by CDFW and the RWQCB within the 52.86 acres proposed for dedication within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor, which may include properties owned by SWEPI/Aera Energy that are within or adjacent to the Chino Hills State Park, as outlined in Mitigation Measure BIO 1.

Regulatory Habitat Mitigation Monitoring Plan

If restoration mitigation (as stated above) is selected, the project applicant shall develop a Regulatory Habitat Mitigation Monitoring Plan (HMMP) for impacts to jurisdictional resources, including black willow thickets (state rarity ranking of S3). The HMMP shall be prepared by a qualified biologist and approved by USACE, CDFW, and RWQCB. The project applicant shall begin restoration activities (e.g., soil prep, seeding, planting) no later than one year after issuance of the first permit that allows ground disturbance (e.g., grading permit). The project applicant shall be fully responsible for implementing the revegetation program until the restoration areas have met the success criteria outlined in the HMMP. The regulatory agencies shall have final authority over mitigation area sign-off. The HMMP shall include, at a minimum, 1) project description, 2) mitigation goals, 3) description of mitigation site, 4) implementation approach, 5) maintenance/monitoring approach, 6) success criteria/contingency measures, and 7) funding mechanism.

Impact 5.4-3

See Mitigation Measures BIO-1 through BIO-3.

Impact 5.4-4

See Mitigation Measures BIO-1 through BIO-4.

Impact 5.4-5

See Mitigation Measures BIO-1 and Mitigation Measures BIO-2.

5.4.8 Level of Significance After Mitigation

Impact 5.4-1

With implementation of Mitigation Measures BIO-1 though BIO-3, potential impacts to special status vegetation communities and wildlife species would be reduced to a less than significant level. This impact is not significant and unavoidable.

Impact 5.4-2

With implementation of Mitigation Measures BIO-1, BIO-2, and BIO-4, impacts to riparian habitat, jurisdictional waters, and other sensitive habitats, including the coastal California gnatcatcher critical habitat, would be reduced to a less than significant level. This impact is not significant and unavoidable.

Impact 5.4-3

With implementation of PPP BIO-1 and Mitigation Measures BIO-1 through BIO-3, potential impacts to migratory and nesting birds, including migratory movement of the coastal California gnatcatcher, would be reduced to a less than significant level. This impact is not significant and unavoidable.

Impact 5.4-4

With implementation of Mitigation Measures BIO-1 through BIO-4, potential impacts related to biological resources would be reduced to a less than significant level; thus, inconsistencies with some of the General Plan policies protecting biological resources would be reduced to a less than significant level. This impact is not significant and unavoidable.

Impact 5.4-5

With implementation of Mitigation Measures BIO-1 and BIO-2, the proposed project would not conflict with the USFWS's coastal California gnatcatcher critical habitat, and impacts would be less than significant. This impact is not significant and unavoidable.

5.4.9 References

Cadre Environmental. 2022, January. Biological Resources Technical Report: Brea 265 Specific Plan City of Brea, Orange County, California.

Conservation Biology Institute (CBI). 2005. Maintaining Ecological Connectivity Across the "Mission Middle" of the Puente-Chino Hills Wildlife Corridor.

United States Fish and Wildlife Service. ECOS: Environmental Conservation Online System Online Mapper. https://ecos.fws.gov/ecp/report/table/critical-habitat.html.

5.5 CULTURAL RESOURCES

Cultural resources comprise archaeological and historical resources. Archaeology studies human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. 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. This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Brea 265 Specific Plan to impact cultural resources in the City of Brea and its sphere of influence (SOI). The analysis in this section is based in part on the following information:

- *Paleontological and Cultural Resources Assessment for the Brea 265 Specific Plan*, City of Brea, Orange County, California, Cogstone, March 2019.

A complete copy of this study is in Appendix E to this Draft EIR.

5.5.1 Environmental Setting

5.5.1.1 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.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands.

Native American Graves Protection and Repatriation Act

NAGPRA is a federal law passed in 1990 that mandates 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 or culturally affiliated Indian tribes.

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, which administers federal- and state-mandated historic preservation programs in California as well as the California Heritage Fund.

PRC Sections 5097.9 to 5097.991 provide protection to Native American historical and cultural resources and sacred sites; identify the powers and duties of the Native American Heritage Commission (NAHC); require that descendants be notified when Native American human remains are discovered; and provide for treatment and disposition of human remains and associated grave goods.

California Health and Safety Code

The discovery of human remains is regulated per California Health and Safety Code Section 7050.5, which states that "In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation…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."

California Register of Historical Resources

The California Register of Historic Resources is the state version of the National Register of Historic Resources program. It was enacted in 1992 and became official January 1, 1993. The California Register was established to serve as an authoritative guide to the state's significant historical and archaeological resources.

Resources that may be eligible for listing include buildings, sites, structures, objects, and historic districts. According to subsection (c) of Public Resources Code Section 5024.1, a resource may be listed as a historical resource in the California Register if it meets any of the four National Register criteria.

Local Ordinances

The City of Brea generally defers to the provisions of CEQA for issues related to cultural resources. Specific mitigation measures for cultural resources (paleontological and archaeological) can be found in Section 3.7 of the City of Brea General Plan (2003) and are summarized below:

1. City staff may require development permit applicants to provide studies that document the presence/absence or archaeological and/or paleontological resources. Studies will be required in areas with documented or inferred resource presence. On properties where resources are identified, such studies shall provide a detailed mitigation plan, including a monitoring program and recovery and/or in situ preservation plan, based on the recommendations of a qualified specialist.

2. All archaeological resources shall be subject to the provisions of CEQA. (PRC Section 21083.2)

5.5.1.2 METHODOLOGY

Cultural Resources Records Search and Historic Society Consultation

A search of the California Historic Resources Information System at the South Central Coastal Information Center (SCCIC) located on the campus of California State University, Fullerton, was conducted on February 7, 2019, by Cogstone. The records search covered the project site as well as a one-mile search radius. Results showed 29 cultural resources investigations within a one-mile search radius, 9 within the project area.

In addition to the SCCIC, a variety of sources were consulted in February 2019 to obtain information regarding the cultural context of the project area. Sources included the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), California Historical Resources Inventory, California Historical Landmarks, and California Points of Historical Interest.

Cogstone consulted with the Brea Historical Society and Olinda Oil Museum on March 14, 2019.

Pedestrian Field Survey

The project site was also surveyed on February 25, 26, and 27, 2019, by Cogstone archaeologists and cross-trained paleontologists. The project site was divided into three areas to facilitate the pedestrian survey. All undeveloped ground surface areas within the ground disturbance portion of the project area were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal,

glass, ceramics). Existing ground disturbances (e.g., cutbanks, ditches, animal burrows, etc.) were also visually inspected.

Sacred Lands File Search and Native American Consultation

A Sacred Lands File search was requested from the NAHC on January 25, 2019. On January 28, 2019, the NAHC indicated that a search was completed with negative results.

5.5.1.3 EXISTING CONDITIONS

Natural Setting

The geological, physiographical, and ecological zones in the project site are best described as alluvial plains and valleys bounding the western margin of the Chino Hills. The Chino Hills are the northernmost portion of the Santa Ana Mountains and the Peninsular Ranges, but are isolated from both by Santa Ana Canyon southeast of the project site. A majority of the project site has a 0 to 10 percent slope. It is approximately 4.25 miles north of the Santa Ana River, and Carbon Canyon Creek crosses its southern end.

Native vegetation communities are characterized by coastal scrub communities dominated by species such as California sagebrush (*Artemisia californica*), coastal brittle-bush (*Encelia californica*), monkey flowers (*Mimulus aurantiacus*), scrub oak (*Quercus berberidifolia*), and toyon (*Heteromeles arbutifolia*). Wildlife species native to the area include amphibians such as the side-blotched lizard (*Uta stansburiana*), birds such as black-necked stilt (*Himantopus mexicanus*), mammals such as the California mouse (*Peromyscus californicus*) and raccoon (*Procyon lotor*), and fish species such as the white croaker (*Genyonemus lineatus*) and the California corbina (*Menticirrhus undulatus*).

The majority of the project has been used for oil production continuously since the early 1900s, with the exception of the southern agricultural area. Approximately 110 wells are in operation currently.

Cultural Setting

Prehistory

Approaches to prehistoric frameworks have changed over the past half century from being based on material attributes, to radiocarbon chronologies, to association with cultural traditions. Archaeologists defined a material complex consisting of an abundance of milling stones (for grinding food items) with few projectile points or vertebrate faunal remains dating from about 7,000 to 3,000 years before the present as the "Millingstone Horizon" (Wallace 1955). Later, the Millingstone Horizon was redefined as a cultural tradition named the Encinitas Tradition (Warren 1968) with various regional expressions. The Encinitas Tradition is currently redefined as comprising four geographical patterns: (1) Topanga in coastal Los Angeles and Orange counties; (2) La Jolla in coastal San Diego County; (3) Greven Knoll in inland San Bernardino, Riverside, Orange, and Los Angeles counties; and (4) Pauma in inland San Diego County.

The Encinitas Tradition characteristics are abundant metates and manos, crudely made core and flake tools, bone tools, shell ornaments, and very few projectile points, with subsistence focusing on collecting (plants, shellfish, etc.). Faunal remains vary by location but include shellfish, land animals, marine mammals, and fish.

Prehistoric Chronology

The latest studies of the vicinity of the project site recognize its prehistoric cultures as expressive of the Greven Knoll Pattern of the Encinitas Tradition. About 3,500 years ago, the Encinitas Tradition was replaced in the greater Los Angeles Basin by the Del Rey Tradition. This tradition has been generally assigned to the Intermediate and Late Prehistoric periods. The changes that initiated the beginning of the Intermediate Period include new settlement patterns, economic foci, and artifact types that coincided with the arrival of a biologically distinctive population. The Intermediate and Late Prehistoric periods have not been well defined. Many archaeologists have proposed that the beginning of the Intermediate marked the arrival of Takic-speaking groups (from the Mojave Desert, southern Sierra Nevada, and San Joaquin Valley), and that the Late Prehistoric Period reflected Shoshonean groups (from the Great Basin). Related cultural and biological changes occurred on the southern Channel Islands about 300 years later.

The Del Rey Tradition replaces usage of the Intermediate and Late Prehistoric designations for both the southern California mainland and the southern Channel Islands. Within the Del Rey Tradition are two regional patterns—Angeles and Island. The Del Rey Tradition represents the arrival, divergence, and development of the Gabrielino in southern California.

Ethnographic Context

The project site is within the traditional tribal territory of the Gabrielino (Tongva). The project area is 5.5 miles west of the approximate location of the ethnographical documented Gabrielino Village of` Hotuuknga. Hotuuknga was reported near the location of the former Bernardo Yorba adobe house on the northern bank of the Santa Ana River.

The project site was used in prehistory for its abundant deposits of asphaltum, or tar. The Gabrielino word for tar is shaanat. Local Native American tribes used the naturally occurring oil and tar seeps for tar's effective adhesive properties, that is, as a means of waterproofing baskets and canoes, hafting (attaching) projectile points to their shafts, plugging abalone shells for bowls and containers, and for medicinal purposes. It was also a valuable trade item. Early Spanish explorers referred to the local substance as *brea*, Spanish for tar or pitch.

Historic Context

The project site is along the eastern boundary of the former oil boom town known as Olinda. Following the establishment of the Santa Fe Railroad into Orange County along the Santa Ana Canyon in 1887, land companies formed to solicit buyers with aggressive land advertising campaigns. The area was originally subdivided and advertised to farmers and ranchers in the 1880s. The agricultural industry was abandoned just before the emerging oil industry took off. The southern portion of the project area on the floodplain of Carbon Canyon Creek retained its value as agricultural land and is still used for agriculture.

In 1882, the Chandler Oil and Mining Company were the first to extract oil, drilling to depths of 100 to 300 feet in the Olinda area in Tonner Canyon. Tonner Canyon was immediately north of the project site. The members of the Chandler Oil and Mining Company formed the Union Oil Company of California in 1890, and the Union Oil Company expanded its holding, referred to as the Upper and Lower Stearns Lease (the project area includes portions of the southern Lower Stearns Lease). In 1890, approximately 510,000 barrels of crude oil were extracted, and by 1913, the Union Oil Company was the principal producer of oil in southern California.

In 1897, the Brea Cañon Oil Company acquired some of the Union Oil Company's land holding, and the Brea Cañon Oil Company, in partnership with Charles Canfield, entered into partnership with the Santa Fe Railway Company. The Santa Fe Railway established a spur immediately east of the project site that terminated just north of Carbon Canyon Road.

The project site is located on what was formally referred to as the lower Santa Fe Lease, later owned by the Shell Oil Company and the West Coast Oil Company. The northern portion of the project site has been continuously used for oil production since the 1880s, and the southernmost portion has been used for agriculture. The large oil companies owned the land and houses in the former town of Olinda, which was to the east of the project area where Carbon Canyon Regional Park is now and in the area just north of the park and Carbon Canyon Road.

The town of Olinda was removed in 1959 due to flood control measures undertaken by the County of Orange and the U.S. Army Corps of Engineers. Olinda was situated in the valley floodplain created by Carbon Creek, a perennial tributary to the Santa Ana River. The valley experienced devastating flooding during heavy rains when the Santa Ana River swelled. The flood control measure for the area was the construction of the Carbon Canyon Dam, which converted the valley into a reservoir in 1959. Although Olinda is gone, its associated oil fields at higher elevations are still in use to the west of the former town.

Archaeological and Historic Resources

Previously Recorded Resources on the Project Site

An archaeological records search at the SCCIC indicated that 29 cultural resources investigations have been conducted within a one-mile radius of the project site, and 9 of them were in the project site. The results show that five cultural resources were recorded in the project site, as described below and summarized in Table 5.5-1.

Table 5.5-1 Previously Recorded Cultural Resources in the Project Site

Primary Number	Trinomial	Resource Type	Resource Description	Date Recorded
P-30-001665	CA-ORA-001665H	Historic Archaeological Site	Historical refuse scatter, small grove of Eucalyptus	1998
P-30- 001666	--	Historic Resource	Ancillary Building, rectangular wood frame building, "generator building": Not dated	1998
P-30-001738	CA-ORA-001738H	Historic Archaeological Site	Historical foundation, remnant of historical oiled road	2013
P-30-120002	--	Historic Archaeological Site	Historical refuse scatter	1977
P-30- 177012	--	Historic District	Oil Field "Stearns Lease," oil derricks, pumps, well, storage and processing facilities, oil pipelines, and associated buildings.	2000, 2006

Source: Cogstone 2019.

- **P-30-001665 (CA-ORA-1665H)** is a historical archaeological site consisting of three concentrations of historical refuse scatters within an 18-acre area. The site is south of Lambert Road and west of South Valencia Avenue, and artifacts date from 1900 to 1920. The site is in the area of Flanigan Corners, a secondary area of development to the west of historical Olinda. This site was not evaluated for the NRHP or the CRHR.

- **P-30-001666** is a historical built environment resource consisting of a generator building associated with the oil field. The building is a rectangular, wood-framed building on a poured concrete foundation with a gabled roof. The walls and roof are made of corrugated metal. The building is along an access road west of South Valencia Avenue. This site was not evaluated for the NRHP or the CRHR.

- **P-30-001738 (CA-ORA-1738H)** is a historical archaeological site consisting of two linear features north of Lambert Road and west of Valencia Avenue. The first feature is a concrete road segment measuring 24 feet long and 18 inches wide. The second feature is a segment of an oiled road that runs parallel to the concrete road segment. The features are likely associated with the nearby oil wells. This site was not evaluated for the NRHP or the CRHR.

- **P-30-120002** is a historical archaeological site consisting of a historical refuse scatter in Carbon Canyon Regional Park at the eastern boundary of the project site. The site was recorded in 1977 and was noted to include artifacts dating to the late 1800s. Some of the artifacts were collected by the park and displayed at the visitor's center. This site was recommended ineligible for listing in the NRHP and CRHR.

- **P-30-177012** was originally recorded as the Stearns Lease Historic District, composed of formally active air-balanced and counterbalanced, pump-jack oil wells. The Historic District was later updated and is now referred to as the Brea-Olinda Oil Field District. A narrow strip of the originally recorded district overlaps the northwest boundary of the current project site. The formally recorded oil wells have been removed, and a housing development now exists on the property, excluding the narrow strip included in the current project site. Assembled by the Union Oil Corporation (UNOCAL) as a benefit for the employees of Union's Brea-area operators and their families, the site record was updated in 2007to include the "Wildcatters Park" (circa 1960), which has a commemorative historical oil derrick and other

relics and monuments to the area's oil industry. However, Wildcatters Park is not on the project site. P-30-177012 was recommended ineligible for listing in the CRHR and was not evaluated for the NRHP.

Additionally, east of the project site is the location of the historical oil boom town, Olinda, at 4442 Carbon Canyon Road, Brea (P-30-162260; HRI 089531). This resource is California State Landmark Number 918 and is listed on the California Register of Historic Places, Number 918. It is also listed on the California Historical Resources Inventory as Property Number 089531. Although the physical location of the plaque is 0.5 mile to the east of the project site, the oil wells associated with the former town of Olinda are on the project site.

Off-Site Previously Recorded Resources

In addition, 49 cultural resources are outside of the project site but within the one-mile search radius. These include 15 cultural resources within 0.25 mile, 12 cultural resources between 0.25 and 0.5 mile, and 19 cultural resources between 0.5 and 1.0 mile of the project site. (See Table 3, Previously Recorded Cultural Resources, of the Cultural Assessment Report in Appendix E.) The cultural resource types include two prehistoric archaeological sites, four prehistoric isolates, three multicomponent sites (both prehistoric and historic), 24 historic archaeological sites, 10 historic isolates, two historic districts, and six historic built environment resources (historic resources).

Survey Result

Three new cultural resources were observed and recorded as a result of the archaeological and paleontological surveys conducted by Cogstone on February 25 through 27, 2019.

The project site was divided into three areas (Areas A, B, and C), as shown in Figure 5.5-1, *Cultural Resources Survey Area*. In addition to the five previously recorded resources, three new cultural resources were observed and recorded—two in Area A and one in Area B (see Figure 5.5-2, *Cultural Resources Locations*).

Area A

Area A consists of the project site west of Valencia Avenue and north and south of Lambert Road, and includes APN 107-682-03. The area is relatively level and currently used by oil field, the Greenfield Nursery, and Future Food Farms. A grid of access road provided access throughout the area. Visibility within the access road was excellent (100 percent visibility) but visibility within the majority of Area A was poor (5 to 10 percent visibility) due to dense invasive grasses and clovers induced by recent rains and active oil extraction and aquaculture activities. Four previously recorded resources are in Area A (i.e., P-30-001665, P-30-001666, P-30-001738, and P-30-177012). These resources were revisited and updated on DPR 523 forms (see Appendix D of the Cultural Resources Assessment [DEIR Appendix E]). Two additional cultural resources (both historical structures) were newly observed and recorded.

Figure 5.5-1 - Cultural Resources Survey Area
5. Environmental Analysis

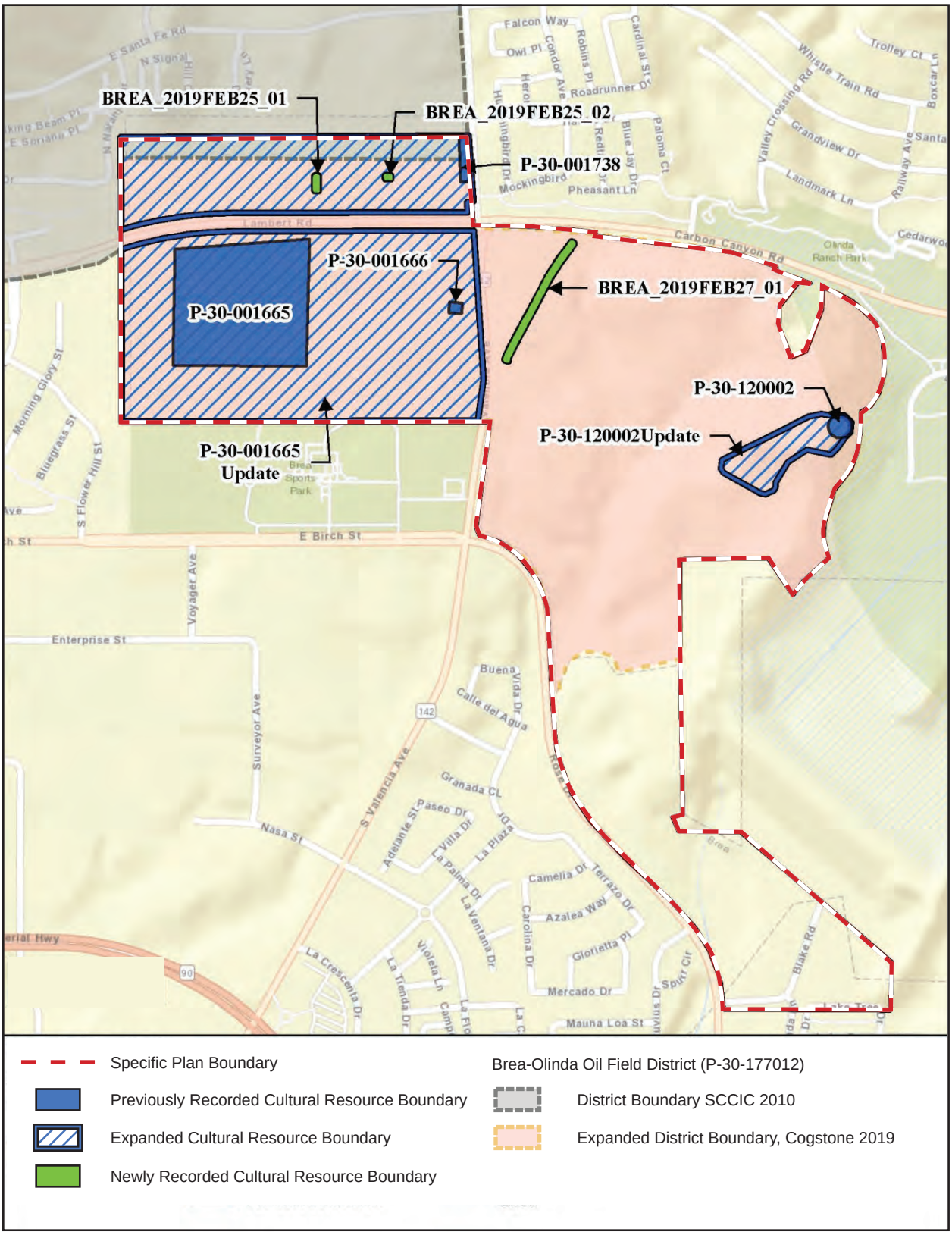


Source: Cogstone

5. Environmental Analysis
CULTURAL RESOURCES

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Figure 5.5-2 - Cultural Resources Locations
5. Environmental Analysis



Source: Cogstone

5. Environmental Analysis
CULTURAL RESOURCES

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- **BREA_2019FEB25_01.** In the northern portion of Area A, north of Lambert Road, this historical built-environment resource consists of a utilitarian shed built in a rectangular plan on a concrete slab with a normal-pitched, front-gabled roof. A gabled monitor roof is at the center of the roof's ridge and is likely used for ventilation. The building's wood- and metal-framed exterior is clad in corrugated metal sheets, as is the roof and monitor roof. In the center of both the north and south elevations is a small, wood-framed, square window. Double doors of corrugated metal sheets are on the west elevation. DPR 523 forms have been prepared for this resource (see Appendix D of the Cultural Resources Assessment [DEIR Appendix E]).

- **BREA_2019FEB25_02.** In the northern portion of Area A, north of Lambert Road, this historical built-environment resource consists of a single-story utilitarian building set in a rectangular plan on a concrete slab with a high-pitched roof. The side-gabled roof is covered with corrugated metal sheets, with its exposed eaves overhanging on all elevations. The building's wood frame is clad in corrugated steel sheets. At the building's east elevation are six bay door openings. Doors to five of these openings are made of hinged corrugated steel and wood boards. Near the north end of the east elevation, the fifth bay opening has a swinging metal-rod gate. A wooden lean-to is attached to the north elevation and is covered by corrugated sheet metal. Also at the north elevation are two window openings; one is boarded up and the other is a two-over-two, double hung, aluminum window. Wire security mesh covers all window openings. This fenestration pattern on the south elevation is identical to the north. DPR 523 forms have been prepared (see Appendix D of the Cultural Resources Assessment [DEIR Appendix E]).

Area B

Area B consists of a hilly area east of Valencia Avenue, south of Carbon Canyon Road, west of Carbon Canyon Regional Park, and north of the Petlzer Pines Christmas Tree Farms. Area B is composed of APNs 110-512-36, 110-017-14, 110-512-37, 110-512-77, and 110-221-23. The terrain in Area B is overall hilly with variable slopes throughout, although many areas exceed 45 degrees, inhibiting access; visibility is also varied. A network of access roads traverse Area B, providing access to active oil wells, maintenance, and work areas; these roads are highly disturbed due to vehicle traffic. Visibility along the access roads and in work and maintenance areas is excellent (100 percent visibility). The areas between access roads is covered in dense vegetation that consists of native coastal sage scrub species in the steeper sloped areas and combination of invasive weeds and grasses and coastal sage scrub species in the more level areas. Visibility within the areas between the access road is poor (5 to 10 percent visibility). Numerous historical-era eucalyptus and California pepper trees are located throughout Area B.

Historic-era refuse was observed throughout Area B; however, the eastern portion of Area B had the densest concentration of refuse, structural debris, and abandoned foundations and equipment related to the oil extraction industry. Historic material is concentered along a heavily used access road that follows the path of an unimproved historic dirt road related to the oil industry that bisects Area B in the center, offsetting slightly to the east. Another access road that follows an unimproved historic road bisects Area B and is offset slightly to the west. This road is in the active oil production areas and crosses through the maintenance yard for the active oil lease; numerous decommissioned oil pumps, pipes, and pumps are cached here. New parts are intermingled with historic-era parts and are used when needed. A large concentration of concrete rubble and

metal pipes, scraps, and rebar was noted in the northern portion of Area B among a network of active, lateral pipes.

One previously recorded resource (P-30-120002) was revisited and updated on DPR 523 forms. One newly recorded resource, a historic-era segment of the Valencia Road (BREA_2019FEB27_01), was observed and recorded.

- **BREA_2019FEB27_01.** This historic road segment consists of a former segment of Valencia Avenue. Originally, the road trended north-south, veering northeast to merge with what is now Carbon Canyon Road. The original alignment appears on the 1901 Anaheim 15' topographic map. The 1935 Blackburn Map of Orange County labels the road Valencia Boulevard and Olinda Boulevard. According to historical aerials, the road fell into disuse sometime between 1972 and 1980, when the current alignment of the roads became the primary vehicle corridor. DPR 523 forms have been prepared (see Appendix D of the Cultural Resources Assessment [DEIR Appendix E]).

Area C

Area C is east of Rose Drive and west of Carbon Canyon Dam. It is composed of APNs 110-512-53, 110-512-52, 110-512-80, 159-402-15, and 110-512-51 and is currently used by Peltzer Christmas Tree Farm and Mannaserro Strawberry Farm. Visibility on the access road is excellent (100 percent visibility); however, visibility within the majority of the area is poor (5 to 10 percent visibility) because it is actively used as agricultural fields. No significant cultural resources were observed in Area C.

5.5.2 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:

C-1 Cause a substantial adverse change in the significance of a 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.

5.5.3 Plans, Programs, and Policies

Regulatory Requirements

PPP CUL-1 Pursuant to Public Resources Code Section 21083.2(c), to the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in PRC Section 21083.2. The project applicant shall provide a guarantee to the lead agency (City of Brea) to pay one-half the estimated cost of mitigating the significant effects of the project on unique archaeological resources. In determining payment, the City of Brea shall give due consideration to the in-kind value of project design or expenditures that are intended to permit any or all archaeological resources or California Native American culturally significant sites to be preserved in place or left in an undisturbed state. When a final decision is made to carry out or approve the project, the City of Brea shall, if necessary, reduce the specified mitigation measures to those which can be funded with the money guaranteed by the project applicant plus the money voluntarily guaranteed by any other person or persons for those mitigation purposes. To allow time for interested persons to provide the funding guarantee referred to in this subdivision, a final decision to carry out or approve a project shall not occur sooner than 60 days after completion of the recommended special environmental impact report required by this section.

PPP CUL-2 All construction activities will be conducted in accordance with Section 7050.5 of the California Health and Safety Code regarding the potential discovery of human remains. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has been contacted. If applicable, the Native American Heritage Commission will be responsible for designating the most likely descendant (MLD), as required by Section 5097.98 of the California Public Resources Code. If the landowner rejects the recommendations of the MLD, the burial location would be determined in compliance with California Public Resources Code, Section 5097.98.

5.5.4 Environmental Impacts

5.5.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. [Threshold C-1]

The project site has been continuously used for oil production and, to a lesser degree, for agriculture since the 1880s. Review of existing historical documents, maps, and literature in tandem with the results of the intensive pedestrian survey indicate that Areas A and B of the current project site represent an extension of the previously recorded historic district Brea-Olinda Oil Field District (P-30-177012).

In 2000, Shahira Ashkar evaluated an area of the Brea-Olinda Oil Field District to the northwest of the current project site, surveying and evaluating archaeological resources and historic resources separately. The original 2000 evaluation found that individual historical resources lack the context necessary to convey their cultural significance. A representative array of resources sufficient to convey what the oil field settlement was like between 1894 and 1920s would need to be present for the resources to qualify for CRHR listing as a historic district. Historic photographs and archival research indicate that between 1894 and the 1920s this oil field consisted of derricks, pumps, oil storage and processing facilities, and a camp that was composed of boarding houses, homes, warehouses, and administrative buildings. Because all that remains of the field today are pumps, the Stearns Lease lacks integrity as a district and is not recommended eligible for listing in the CRHR.

As discussed under 5.5.1.3, *Existing Conditions*, five previously recorded historic and historic archaeological sites (i.e., P-30-001665, P-30- 001666, P-30-001738, P-30-120002, and P-30- 177012) and three newly identified historic resources (i.e., BREA_2019FEB25_01, BREA_2019FEB25_02, and BREA_2019FEB27_01) were observed during a survey of the project site (see Figure 5.5-2). As part of the Cultural Resources Assessment, the identified historic and historic archaeological resources sites were evaluated as part of the Brea-Olinda Oil Field District, based on the CEQA Guidelines Section 15064.5, and the Brea-Olinda Oil Field District is not recommended eligible for CRHR listing under any of the significance criteria that follow.

Criterion 1: Although this portion of the Brea-Olinda Oil Field District was one of the earliest areas in Southern California that was used for large-scale oil production, it was the not the first, nor is it a unique example of the industry. Therefore, it is not recommended eligible for CRHR listing under Criterion 1.

Criterion 2: This portion of the Brea-Olinda Oil Field District is associated with Edward L. Doheny, who was instrumental in bringing the oil industry to Orange County and connecting the Santa Fe Railroad spur to the area. His association to the district is limited to its founding and early development. Doheny is considered an important player in local and California history; however, his legacy has been preserved farther to the east near the old town site of Olinda (P-30-162260; CRHP; CHL No.918; HRI No. 089531), where his original

Olinda Oil Well Number 1 is still in use near the Olinda Museum. The Brea-Olinda Oil Field District is not recommended eligible for CRHR listing under Criterion 2.

Criterion 3: Oil has been extracted on this portion of the Brea-Olinda Oil Field District since the late 1800s. Standing oil pumps and existing pipes, machines, and storage facilities have been in continuous use since the original wells were drilled; therefore, all the standing pumps have been updated as time progressed. Technological upgrades and mechanical maintenance of the wells stripped these resources of their original historic context and integrity. They are not recommended as eligible for CRHR listing under Criterion 3.

Criterion 4: The subject portion of the Brea-Olinda Oil Field has numerous historical archaeological artifacts and features visible on the surface that have been observed and recorded as part of the cultural resources study conducted for the proposed project. Surface manifestations of archaeological material are a reliable indication of subsurface deposits. Additionally, the numerous subsurface deposits observed from construction activities on the Stearns Property to the northwest during construction of the Tonner Hills Project (Backes et al. 2010) are an excellent indicator that similar archaeological deposits could be uncovered during ground-disturbing activities on the project site. The Brea-Olinda Oil Field District may be eligible for CRHR listing under Criterion 4.

In summary, although part of the project site is part of the Brea-Olinda Oil Field District, which is associated with the earliest development of the oil industry in Orange County and is connected to Edward L. Doheny, who was instrumental in bringing the oil industry to Orange County, the area has been in continuous use since the late 1800s, and updates in technology and equipment necessary to maintain an active oil field have stripped the area of historical context; the project site does not convey what the oil field or settlement was like during its historically significant period. The project site only possesses integrity of location and does not maintain the feel of a bustling oil field that once supported an oil boom town. There is always the potential that the subsurface may yield important information to the prehistory as well as the history of the area. However, this is a general caveat often applied to areas with known archaeological sensitivity, but it does not qualify the area as significant. The Cultural Resources Assessment (Appendix E to the DEIR) determined the Brea-Olinda Oil Field as ineligible for listing on the CRHR. For this reason, the proposed project would result in no adverse change in the significance of these historical resources pursuant to CCR Section 15064.5.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.5-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. [Threshold C-2]

There are three historical archaeological sites in the project site (i.e., P-30-120002, P-30-001738 [CA-ORA-1738H] and P-30-001665 [CA-ORA-1665H]). Implementation of the proposed project would affect these identified archaeological resources. In addition, the Cultural Resources Assessment determined that the sensitivity for subsurface archaeological resources in Areas A and B is high due to its use since the 1880s by the oil industry and the presence of numerous historical artifacts and features observed throughout the areas. The multiple archaeological deposits uncovered to the northwest of the project site on the Stearns Property during construction activities in 2010 are a good indication of the kinds of resources that would likely be

found in the project site because the two areas share a nearly identical history and land use pattern. The sensitivity for subsurface archaeological resources in Area C is considered low due to the high degree of previous ground disturbance from agricultural activities. Therefore, development of the proposed project has the potential to affect buried unidentified archaeological resources from Areas A and B. Potential archaeological deposits include historic-era buried materials (e.g., privies, trash pits, or structural remains) and other undocumented surface archaeological materials. There is also a potential for subsurface prehistoric archaeological resources based on the local ethnographic settlement and subsistence patterns, the prehistory and history of the area, the proximity of Carbon Canyon Wash, and the natural tar seeps that were a valuable resource in prehistory. Previously recorded prehistoric sites are also numerous in the surrounding area. Therefore, pursuant to PRC Section 21083.2(c) the project applicant is required to comply with PPP CUL-1 and provide payment for one-half the estimated cost of mitigating the significant effects of the project on archaeological resources.

Pursuant to CCR 15064.5(c)(1), when a project will impact an archaeological site, a lead agency shall first determine whether the site is a historical resource, as defined in subsection (a). As discussed in Impact 5.5-1, the identified historic and historic archaeological sites are not considered historical resources, and they are not considered unique archaeological resources that 1) contain information needed to answer important scientific research questions; 2) have a special and particular quality such as being the oldest of their type; and 3) are directly associated with a prehistoric or historic event or person.

Considering the high sensitivity for subsurface archaeological resources, impacts to archaeological resources would be potentially significant, and mitigation is required.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.5-3: Grading activities could potentially disturb human remains. [Threshold C-3]

The majority of the project site has been used for oil production continuously since the early 1900s, with the exception of the southern agricultural area, which still operates as an agricultural use. The proposed project would require ground clearing, excavation, grading, and other construction activities to accommodate the Brea 265 Specific Plan. Because of the ground disturbance associated with construction, it is possible, though unlikely, that natural landform beneath the site could harbor human remains. In the unlikely event that human remains are encountered during project development, all work is required to cease near the find immediately, and the County Coroner must be notified if potentially human bone is discovered, in accordance with California Health and Safety Code Section 7050.5, described in PPP CUL-2. The coroner will determine, within two working days of being notified, if the remains are subject to his or her authority. If the coroner has reason to believe the remains are Native American, he or she will contact the NAHC by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will designate a most likely descendant (MLD) with respect to the human remains. The MLD has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the Health and Safety Code have been met. Implementation of PPP CUL-2 would ensure that grading activities do not result in adverse impacts to human remains.

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP CUL-2.

5.5.5 Cumulative Impacts

The area considered for cumulative impacts to historic and archaeological resources is within a one-mile radius of the project site, the same area as the records search. There were 49 cultural resources identified within one mile of the project site besides the 5 previously recorded and 3 newly identified resources in the project site. Other development projects in the project vicinity could demolish or otherwise alter historical and archaeological resources. However, as with the proposed project, these other projects would be required to comply with CEQA Guidelines Section 15064.5, which requires the lead agency to determine if discovered resources are unique or historically significant, and if so, to avoid or mitigate impacts to such resources in accordance with the provisions of PRC Section 21083.2. Although portions of the project site and its one-mile vicinity are part of the Brea-Olinda Oil Field District, it was determined that resources identified do not meet the significance criteria to list them as historically significant or unique. Compliance with the existing regulations would ensure that potential impacts to subsurface cultural resources are handled and treated so that no historically significant or unique resources are adversely impacted, and impacts would not be cumulatively significant.

5.5.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.5-1 and 5.5-3.

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

- **Impact 5.5-2** Implementation of the proposed project could unearth previously unidentified archaeological resources during ground-disturbing activities.

5.5.7 Mitigation Measures

Impact 5.5-2

CUL-1 Prior to ground disturbance, a cultural resources mitigation and monitoring plan (CRMMP) shall be prepared and implemented. The CRMMP shall require:

- Monitoring during grading and other earth-moving activities in undisturbed sediments.
- Treatment plan for potential resources that includes:
  - Data to be collected.
  - Requirements for professional identification and/or other special studies as appropriate.

- Requirements for curation at an accredited museum for artifacts meeting significance criteria.

- A comprehensive final mitigation compliance report that includes:
  - A catalog of specimens with museum numbers.
  - An appendix with a letter from the museum stating that it is in possession of the materials.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist evaluates it.

5.5.8 Level of Significance After Mitigation

Impact 5.5-2

Implementation of Mitigation Measures CUL-1 and PPP CUL-1 would reduce potential impacts to archaeological resources to a level that is less than significant. A CRMMP will be prepared and implemented as required under Mitigation Measure CUL-1, and discovery of previously unidentified archaeological resource will be treated in accordance with PPP CUL-1 and as recommended by the treatment plan under Mitigation Measure CUL-1. Therefore, impacts would be reduced to a less than significant level, and no significant and unavoidable impact would remain.

5.5.9 References

Backes, Clarus, John Dietler, Laura Hoffman, Joan Brown, and Virginia Austerman. 2010. Archaeological Monitoring for the Tonner Hills Project Located in Brea, Orange County, California.

Cogstone. 2019, March. Paleontological and Cultural Resources Assessment for the Brea 265 Specific Plan, City of Brea, Orange County, California. DEIR Appendix E.

Wallace, William J. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology* 11(3): 214–230.

Warren, Claude N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, pp. 1–14. *Eastern New Mexico University Contributions in Anthropology* 1(3).

5.6 ENERGY

This section evaluates the potential for energy-related impacts associated with the proposed project and ways in which it would reduce unnecessary energy consumption, consistent with the suggestions in Appendix F of the CEQA Guidelines. Energy service providers to the site include Southern California Edison (SCE) for electrical service and Southern California Gas Company (SoCalGas) for natural gas.

5.6.1 Environmental Setting

Section 21100(b)(3) of CEQA requires that an EIR include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the State CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the project description, environmental setting, and impact analysis portions of technical sections as well as through mitigation measures and alternatives.

In accordance with Appendices F and G of the State CEQA Guidelines, this EIR 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. Other aspects of the proposed project's energy implications are discussed elsewhere in this EIR, including Chapter 3, *Project Description*, and Sections 5.3, *Air Quality*; 5.8, *Greenhouse Gas Emissions*; and 5.17, *Transportation.*

5.6.1.1 REGULATORY BACKGROUND

Federal Regulations

Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the 1973 oil crisis. The act created the Strategic Petroleum Reserve, established vehicle fuel economy standards, and prohibited the export of US crude oil (with a few limited exceptions). It also created Corporate Average Fuel Economy (CAFE) standards for passenger cars starting in model year 1978. The CAFE standards are updated periodically to account for changes in vehicle technologies, driver behavior, and/or driving conditions.

The federal government issued new CAFE standards in 2012 for model years 2017 to 2025 that required a fleet average of 54.5 miles per gallon (mpg) for model year 2025. However, on March 30, 2020, the US Environmental Protection Agency (EPA) finalized an updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021–2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 mpg for model year 2026 vehicles (Federal Register 2020).

On January 20, 2021, President Biden issued Executive Order 13990 (EO 13990), which directs the EPA to reconsider SAFE for the purpose of rescinding the rule. The reconsideration process is ongoing with a public hearing on June 2, 2021, which also started the public comment period that ended July 6, 2021. On August 5, 2021, the National Highway Traffic Safety Administration announced new proposed fuel standards in response to EO 13990. Fuel efficiency under the standards proposed would increase 8 percent annually for model years 2024 to 2026 and increase estimate fleetwide average by 12 mpg for model year 2026 relative to model year 2021 (NHTSA 2021).

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 set increased CAFE 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), carbon capture, and sequestration (USEPA 2022).

State Regulations

Warren-Alquist Act

Established in 1974, the Warren-Alquist Act created the California Energy Commission (CEC) in response to the energy crisis of the early 1970s and the state's unsustainable growing demand for energy resources. The CEC's core responsibilities include advancing State energy policy, encouraging energy efficiency, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation, and preparing for energy emergencies. The Warren-Alquist Act is updated annually to address current energy needs and issues, and its latest edition was in January 2022.

Renewables Portfolio Standard

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

The California Renewables Portfolio Standard (RPS) Program was established in 2002 under SB 1078 (Sher) and 107 (Simitian). The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Initially under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the State. For year 2020, the three largest retail energy utilities provided an average of 43 percent of its supplies from renewable energy sources. Community choice aggregators provided an average of 41 percent of its supplies from renewable sources (CPUC 2021).

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which replaces the SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall 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.

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations 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 (California Code of Regulations [CCR] Title 20, Parts 1600–1608). These standards are updated regularly to allow consideration of new energy efficiency technologies and methods (CEC 2017).

Title 24, Part 6, 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 CEC) in June 1977 (24 CCR Part 6). 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. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require installation of solar photovoltaic (PV) systems for single-family homes and multifamily buildings of three stories and less (CBSC 2019a). The 2019 standards focus on four key areas: 1) smart residential PV 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 are generally 30 percent more energy efficient compared to the 2016 standards, and single-family homes are generally 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar PV system, single-family homes will generally use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

Furthermore, on August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were approved by the California Building Standards Commission in December 2021. The 2022 standards become effective and replace the existing 2019 standards on January 1, 2023. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

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 (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG 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. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 standards became effective on January 1, 2020.

Overall, 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. CALGreen 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 allows 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 (CBSC 2019b).

Assembly Bill 1493

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 CAFE standards under *Federal*, 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 (CARB 2017).

Executive Order N-79-20

On September 23, 2020, Executive Order N-79-20 was issued, which sets a time frame for the transition to zero-emissions (ZE) passenger vehicles and trucks in addition to off-road equipment. It directs CARB to develop and propose the following:

- Passenger vehicle and truck regulations requiring increasing volumes of new ZEVs (zero-emission vehicles) sold in the California toward the target of 100 percent of in-state sales by 2035.
- Medium- and heavy-duty vehicle regulations requiring increasing volumes of new ZE trucks and buses sold and operated in California toward the target of 100 percent of the fleet transitioning to ZEVs by 2045 everywhere feasible, and for all drayage trucks to be ZE by 2035.

Strategies to achieve 100 percent zero emissions from all off-road vehicles and equipment operations in California by 2035, in cooperation with other State agencies, the EPA, and local air districts.

Local

City of Brea Sustainability Plan

The City of Brea approved the City of Brea Sustainability Plan: Leadership in Energy Efficiency (Sustainability Plan) in fall 2012. The plan presents resource efficiency goals, policies, and implementation steps to save energy, water, and other resources while aligning the City of Brea for AB 32 compliance (Brea 2012). The Sustainability Plan is based in part on the City's 2012 Greenhouse Gas Inventory results, which present data for a 2010 baseline year, and on the Energy Action Plan prepared for the City in conjunction with Southern California Edison and the Energy Coalition.

Overall, the Sustainability Plan focuses on creating a sustainable future for the City and offers goals and policies that address energy efficiency and conservation for the residential, business, building, transportation, municipal, hospitality, and education sectors. It includes 88 measures that are divided over three implementation phases. Phase I, intended to be implemented between 2013 and 2014, consisted of 26 total measures that relied on ordinances, public education, utility programs, financing, and public/private partnerships. Phase II includes 46 measures implemented between 2015 and 2017, and Phase III includes 16 measures carried out between 2018 and 2020. In general, the primary mechanism in increasing building energy efficiency and the installation of renewable energy systems is through private and public partnerships to leverage offsetting the costs related to building upgrades and retrofits.

5.6.1.2 EXISTING CONDITIONS

Electricity

The project site is in SCE's service area, which spans much of southern California—from Orange and Riverside counties in the south to Santa Barbara County in the west to Mono County in the north (CEC 2022a). Total

electricity consumption in SCE's service area) was 103,597 gigawatt-hours in 2020 (CEC 2022c).[1] Sources of electricity sold by SCE in 2020, the latest year for which data are available, were:

- 30.9 percent renewable, consisting mostly of solar and wind
- 3.3 percent large hydroelectric
- 15.2 percent natural gas
- 8.4 percent nuclear
- 0.3 percent other
- 42.0 percent unspecified sources—that is, not traceable to specific sources (CEC 2022d)[2]

Gas

SoCalGas provides gas service in the City of Brea and has facilities throughout the city, including the proposed project site. The service area of SoCalGas spans much of the southern half of California, from Imperial County in the southeast to San Luis Obispo County in the northwest to part of Fresno County in the north to Riverside County and most of San Bernardino County in the east (CEC 2022b). Total natural gas consumption in SoCalGas's service area was 691,096 million cubic feet for 2020 (CEC 2022e).

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:

E-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

E-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

5.6.3 Plans, Programs, and Policies

Regulatory Requirements

PPP E-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building Energy Efficiency Standards were effective on January 1, 2020, and the 2022 Building Energy Efficiency Standards will become effective January 1, 2023.

PPP E-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new nonresidential buildings, or meet

[1] One gigawatt-hour is equivalent to one million kilowatt-hours.
[2] The electricity sources listed reflect changes after the 2013 closure of the San Onofre Nuclear Generating Station, which is owned by SCE.

local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).

PPP E-3 California's Green Building Standards Code (CALGreen) requires the recycling and/or salvaging for reuse at minimum of 65 percent of the nonhazardous construction and demolition waste generated during most "new construction" projects (CALGreen Sections 4.408 and 5.408). Construction contractors are required to submit a construction waste management plan that identifies the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project, or salvaged for future use or sale and the amount (by weight or volume).

PPP E-4 Construction activities are required to adhere to Title 13 California Code of Regulations Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

PPP E-5 New buildings are required to adhere to the California Green Building Standards Code and Water Efficient Landscape Ordinance requirements to increase water efficiency and reduce urban per capita water demand.

5.6.4 Environmental Impacts

5.6.4.1 METHODOLOGY

Based on CEQA Guidelines Appendix F, Energy Conservation, in order to ensure energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential impacts of proposed projects, with particular emphasis on avoiding or reducing wasteful, unnecessary, or inefficient use of energy resources. Environmental effects may include the proposed project's energy requirements and its energy use efficiencies by amount and fuel type during demolition, construction, and operation; the effects of the proposed project on local and regional energy supplies; the effects of the proposed project on peak and base period demands for electricity and other forms of energy; the degree to which the proposed project complies with existing energy standards; the effects of the proposed project on energy resources; and the proposed project's projected transportation energy use requirements and its overall use of efficient transportation alternatives, if applicable. The provided energy and fuel usage information provided in this section are based on the following:

- **Building Energy.** CalEEMod default electricity and natural gas rates, which are based on the 2019 Building Energy Efficiency Standards, are used to quantify the electricity and natural gas usage associated with building energy that would be generated by land uses accommodated under the proposed project.
- **On-Road Vehicle Fuel Usage.** Fuel usage associated with operation-related vehicle trips in addition to construction-related vehicle trips (i.e., worker and vendor trips) are based on fuel usage data obtained from EMFAC2021, Version 1.0.1, and on vehicle trip generation and vehicle miles traveled data provided by Linscott, Law and Greenspan, Engineers (see Appendix C).

- **Off-Road Equipment Fuel Usage.** Fuel usage for construction-related off-road equipment is based on fuel usage data from OFFROAD2021, version 1.0.1, and on the equipment mix and operations anticipated for the proposed project (see Table 5.3-10, *Construction Activities, Phasing, and Equipment*, for details regarding the anticipated construction schedule and equipment).

5.6.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1: The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. [Threshold E-1])

Short-Term Construction Impacts

Construction of the proposed project would create temporary increased demands for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use. Energy consumption for the three phases of development and remediation (2023 through 2025) was calculated using fuel usage data from EMFAC2021, v. 1.0.1., and OFFROAD2021, v. 1.0.1, and the results are shown in Table 5.6-1, *Construction-Related Fuel Usage*.

Table 5.6-1 Construction-Related Fuel Usage

Project Component	Gas		Diesel		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	kWh
Construction Worker Commute	7,463,437	263,515	14,377	382	523,904	193,504
Construction Vendor Trips	107,249	20,501	747,888	103,149	0	0
Construction Soil Haul Trips	0	0	334,275	55,688	0	0
Construction Off-Road Equipment	N/A	61,124	N/A	505,194	N/A	0
Total	**7,570,686**	**345,140**	**1,096,540**	**664,413**	**523,904**	**193,504**

Source: CalEEMod v.2020.4.0; EMFAC2021 v.1.0.1; OFFROAD2021 v.1.0.1.
Notes: VMT=vehicle miles traveled; kWh=kilowatt hour

Electrical Energy

Construction activities associated with the land uses accommodated under the proposed project would require electricity use to power the construction equipment. The electricity use during construction would vary during different phases of construction, where the majority of construction equipment during demolition and grading would be gas powered or diesel powered, and the later construction phases would require electricity-powered equipment for interior construction and architectural coatings. Overall, the use of electricity would be temporary in nature and would fluctuate according to the phase of construction. Additionally, it is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities.

Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

Natural Gas Energy

It is not anticipated that construction equipment used for the proposed project would be powered by natural gas, and no natural gas demand is anticipated during construction. Therefore, no impact is anticipated with respect to natural gas usage.

Liquid Fuels and Transportation Energy

Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy used during construction of individual projects accommodated under the proposed project would come from the transport and use of construction equipment, delivery vehicles, haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would cease upon completion of project construction. It is anticipated that the majority of off-road construction equipment, such as that used during grading activities, would be gas or diesel powered. In addition, all use of construction equipment would cease upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure.

To limit wasteful and unnecessary energy consumption, the construction contractors would minimize nonessential idling of construction equipment during construction in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9. In addition, it is anticipated that electricity would be available for use during construction from existing power lines and connections, which could minimize or avoid the use of generators, which are less efficient. Furthermore, construction trips would not result in unnecessary use of energy since the proposed site is centrally located and is served by numerous regional freeway systems (e.g., State Routes 142, 90, and 57) that provide the most direct and shortest routes from various areas of the region. Overall, it is expected that construction fuel associated with land use developments accommodated under the proposed project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Therefore, impacts would be less than significant with respect to transportation energy.

Long-Term Impacts During Operation

Operation of the proposed project would create additional demands for electricity and natural gas compared to existing conditions and would result in increased transportation energy use. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and lighting.

Electrical Energy

Operation of the existing facility consumes electricity for various purposes, including but not limited to heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; lighting; and use of on-site

equipment and appliances. The proposed electricity consumption for the proposed single-family detached homes, townhouses and condominiums, and associated parking are shown in Table 5.6-2, *Operation-Related Electricity Consumption*.

Table 5.6-2 Operation-Related Electricity Consumption

Land Use	Electricity (kWh/year)[1]
Single-Family Detached	3,518,170
Condo/Townhouse	3,141,010
Parking Lot	22,680
Total	**6,681,830**

Source: See Appendix C.
Note: kWh=kilowatt-hour

Electrical service to the proposed project would be provided by SCE through connections to existing off-site electrical lines and new on-site infrastructure. As shown in the table, electricity use associated with the proposed project would total 6,681,830 kilowatt-hours per year. While the proposed project would increase energy demand at the site compared to existing conditions, it would be required to comply with the applicable Building Energy Efficiency Standards and CALGreen. Because the proposed project would comply with these regulations, it would not result in wasteful or unnecessary electricity demands. Overall, homes would have solar panels, EnergyStar appliances, and energy-efficient HVAC systems and lighting fixtures. Furthermore, per the design guidelines of the proposed project, buildings would use passive design strategies such as daylighting, natural sources of heating and cooling, operable windows, shading on south-facing windows, ceiling fans, and well-designed buildings with high-U values to minimize energy demand needed to heat and cool a building. Therefore, the proposed project would not result in a significant impact related to electricity.

Natural Gas Energy

The natural gas consumption associated with the proposed project is shown in Table 5.6-3, *Operation-Related Natural Gas Consumption*. As seen in the table, natural gas demand would total 26,432,500 kilo-British thermal units per year with the proposed project due to consumption by the residential units. Because the proposed project would be built to meet the Building Energy Efficiency Standards, it would not result in wasteful or unnecessary natural gas demands. As stated above, the proposed homes would incorporate passive design strategies to minimize heating needs in addition to having high-efficiency water heaters. Therefore, operation of the proposed project would result in less than significant impacts with respect to natural gas usage.

Table 5.6-3 Operation-Related Natural Gas Consumption

Land Use	Natural Gas (kBTU/year)[1]
Single-Family Detached	12,779,000
Condo/Townhouse	13,653,500
Total	**26,432,500**

Source: See Appendix C.
Note: kBTU=kilo-British thermal units.

Transportation Energy

The proposed project would result in the consumption of transportation energy during operations from the use of motor vehicles. Because the efficiency of the motor vehicles in use with the proposed project is unknown—such as the average miles per gallon—estimates of transportation energy use are based on the overall vehicle miles traveled (VMT) and related transportation energy use. The project-related VMT would primarily come from future residents. Based on the numbers shown in Table 5.6-4, *Operation-Related Fuel Usage*, the annual VMT for the proposed project is estimated to be 32,322,184 miles per year. However, the proposed project would involve the construction of a master planned community that would provide more housing opportunities in the city. The proposed project would include design features such as bicycle storage facilities, physical linkages between land uses, and access to public and common use spaces. These features would promote walking or bicycling in the community, thereby minimizing VMT. Furthermore, because the project would be in an urbanized area with nearby amenities and employment opportunities, it would contribute to reducing the VMT between residential and service needs. These features and aspects of the proposed project would contribute to minimizing VMT and transportation-related fuel usage. Additionally, as discussed under Impact 5.17-2, the project-generated VMT per service population would be below the General Plan Buildout VMT per population threshold and, overall, the proposed project would result in less than significant VMT impacts. Thus, it is expected that operation-related fuel usage associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Therefore, impacts would be less than significant with respect to operation-related fuel usage.

Table 5.6-4 Operation-Related Fuel Usage

Vehicle Type	Gas		Diesel		CNG		Electricity	
	VMT/year	Gallons/year	VMT/year	Gallons/year	VMT/year	Gallons/year	VMT/year	kWh/year
On-Road Vehicles	30,212,450	973,298	671,210	26,506	5,113	1,324	729,459	234,154

Source: EMFAC2021 v.1.0.1.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.6-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. [Threshold E-2])

The following evaluates consistency of the proposed project with California's RPS program and the energy-related goals and objectives of the City of Brea Sustainability Plan.

California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's RPS Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The RPS goals have been updated since adoption of SB 1078 in 2002. In general, California has RPS requirements of 33 percent renewable energy by 2020 (SB X1-2), 44 percent by 2024, 50 by 2026, 52 percent by 2027, 60 percent by 2030, and 100 percent by 2045. The RPS requirements established under SB 100 are also applicable to publicly owned utilities. The statewide RPS requirements do not directly apply to individual development

projects, but to utilities and energy providers such as SCE, whose compliance with RPS requirements would contribute to the state objective of transitioning to renewable energy. The residential land uses accommodated under the proposed project would comply with the current and future iterations of the Building Energy Efficiency Standards and CALGreen. Under the 2019 Building Energy Efficiency Standards, future single-family residences and multifamily buildings of three stories and less in the proposed Specific Plan area would be required to install solar PV systems. Furthermore, the design guidelines of the proposed Specific Plan include consideration of building siting and orientation in addition to roof plans to maximize PV systems. Therefore, implementation of the proposed project would not conflict or obstruct implementation of California's RPS Program, and no impact would occur.

City of Brea Sustainability Plan

The Sustainability Plan includes goals and measure that focus on increasing energy efficiency and renewable sources of energy. While most of the policies apply specifically to existing structures, workplace energy efficiency, government operations, or public awareness measures, the proposed project is generally consistent with the overall objective of the Sustainability Plan to increase energy efficiency and renewable energy. As stated, homes would have solar panels, EnergyStar appliances, and energy-efficient HVAC systems and lighting fixtures. Also, the design guidelines of the proposed Specific Plan include consideration of building siting and orientation in addition to roof plans to maximize PV systems. According to the design guidelines of the proposed project, buildings would use passive design strategies such as daylighting, natural sources of heating and cooling, operable windows, shading on south-facing windows, ceiling fans, and well-designed buildings with high-U values to minimize energy demand needed to heat and cool a building. Therefore, the proposed project would not interfere with implementation of the City's Sustainability Plan, and no impact would occur.

Level of Significance Before Mitigation: No impact.

5.6.5 Cumulative Impacts

The areas considered for cumulative impacts to electricity and natural gas supplies are the service areas of SCE and SoCalGas, respectively, described above in Section 5.6.1. Other projects would generate increased electricity and natural gas demands. However, all projects within the SCE and SoCalGas service areas would be required to comply with the Building Energy Efficiency Standards and CALGreen, which would contribute to minimizing wasteful energy consumption. Therefore, cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.6.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, following impacts would be less than significant: 5.6-1 and 5.6-2.

5.6.7 Mitigation Measures

No mitigation measures are necessary because there were no significant impacts identified under the applicable thresholds.

5.6.8 Level of Significance After Mitigation

Because no mitigation measures are required, impacts are the same as described in Section 5.6.6.

5.6.9 References

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5.7 GEOLOGY AND SOILS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed project to impact geological and soil resources, paleontological resources, or unique geologic features in the City of Brea and its sphere of influence (SOI). The analysis in this section is based in part on the following technical report(s):

- *EIR-Level Geotechnical Assessment*, Alta California Geotechnical Inc., December 19, 2018 (Appendix F).
- *Third-Party Review of Alta Report dated December 19, 2018, and Site Reconnaissance Visit, Proposed Brea 265 Residential Development, City of Brea, California*, LGC Geotechnical Inc., February 6, 2019 (Appendix G).

Complete copies of these studies are in Appendix F and Appendix G of this Draft EIR.

5.7.1 Environmental Setting

5.7.1.1 REGULATORY BACKGROUND

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972. Its primary purpose is to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act delineates "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The act also requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. 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. The goal is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey prepares and provides local governments with seismic-hazard-zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. SHMA requires responsible agencies to approve projects within seismic hazard zones only after 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.

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 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 2019 version of the CBC (effective January 1, 2020), often with local, more restrictive amendments that are based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and public safety 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 has provisions for earthquake safety based on factors such as occupancy type, the types of soil and rock on-site, and the strength of ground shaking with specified probability of occurring at a site.

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a "Natural Hazard Disclosure Statement" when the property lies within one or more State-mapped hazard areas, including a Seismic Hazard Zone. California law also requires that when houses built before 1960 are sold, the seller must give the buyer a completed earthquake hazards disclosure report and the booklet, "The Homeowners Guide to Earthquake Safety." This publication was written and adopted by the California Seismic Safety Commission.

Soils Investigation Requirements

Requirements for soils investigations for subdivisions requiring tentative and final maps, and for other specified types of structures, are in California Health and Safety Code, Sections 17953 to 17955, and in Section 1802 of the CBC. Testing 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 Brea General Plan

The public safety element of the general plan has the following approach related to allowing development in areas with various geologic conditions.

Goal PS-1: Reduce the risk to the community from seismic activity and geologic conditions, including ground shaking, fault rupture, liquefaction, and landslides.

- **Policy PS-8.1.** Minimize the potential damage to structures and loss of life that may result from an earthquake.
- **Policy PS-8.2.** Require seismic safety standards for construction of all new buildings.
- **Policy PS-8.3.** Continue to require geological and geotechnical investigations of all new developments in areas of potential seismic or geologic hazards as part of the environmental and development review process.

- **Policy PS-8.4.** Require that careful, site-specific evaluations based on detailed surface and subsurface geotechnical studies be conducted in areas where landslides are suspected or known to occur.
- **Policy PS-8.5.** Participate in Federal, State, and local earthquake preparedness and emergency response programs.
- **Policy PS-8.6.** Continue programs, such as the Community Assistance and Response to Emergency Situations (C.A.R.E.S), that further educate and train individuals and neighborhoods how to respond to emergency situations.

5.7.1.2 EXISTING CONDITIONS

Topographically, the project site is characterized by low-lying alluvial terraces with minimal changes in elevation on the southern portions of the site. The northeastern portion of the project site consists of rounded hills and ridgelines of moderate height with intervening canyons and draws. A draw is low ground between two parallel ridges or spurs. The area of low ground itself is the draw, and it is defined by the spurs surrounding it. Draws are similar to very small valleys, but valleys are parallel to a ridgeline; a draw is perpendicular to the ridge and rises with the surrounding ground, disappearing upslope. A steep slope is present on the northeastern edge of the project area above the Carbon Canyon streambed.

Drainage from the project site is by sheet flow to the canyons and draw areas, which drain to the south and southwest. Elevations range from 586 feet to 385 feet. The natural slopes are gentle to very steep and range from 1:1 to 5:1 (horizontal : vertical). Figure 4-2, *Existing Slope Analysis*, shows the existing slope characteristics. Vegetation consists of native grasses, shrubs, and trees and ranges from light to heavy areas, with the heavy vegetation and trees concentrated in the draws and canyons.

The project site is currently being used for oil production, with a nursery on the eastern side. Numerous roadways associated with oil field exploration and production exist throughout the project site. The project site was used extensively in the past for agricultural purposes. Small-scale sand-and-gravel quarrying has also occurred on-site in the past. The Carbon Canyon flood control dam and flood basin lie immediately off-site of the south-central portion of the site.

Several utilities cross the site within easements. A Metropolitan Water District easement crosses the far southern portion of the project area to Rose Drive. A 30-inch, high-pressure gas line crosses the southern portion of the project below the Carbon Canyon dam, and a Mobil Oil gasoline line runs in a roughly north-south direction across the eastern portions of the site from Blake Road to Carbon Canyon Road. The Carbon Canyon Dam sewer line and numerous other utilities associated with oil field production and the nursery traverse the project site.

Existing Geologic Conditions

The project site is on the southwestern flank of the Puente Hills. The Puente Hills form the western to northwestern margin of the Los Angeles Basin, which is in the Peninsular Ranges Geomorphic Province. The Puente Hills are bracketed by the Whittier and Chino fault zones and have been created by uplift along these

faults. Approximately 13,000 feet of Miocene-aged marine elastic sedimentary rock underlie the Puente Hills. These sediments overlie approximately 16,000 feet of Cenozoic-aged rock, which are underlain by Mesozoic plutonic basement rock (Geotech Inc. 2018).

Uplift of the Puente Hills in the late Pleistocene and Holocene created erosional geomorphic features that have been filled in with older alluvial and terrace materials. These older alluvial and terrace deposits underlie the broad alluvial plains, adjacent to the Puente Hills, on which the southern and western portions of the project site lie. More recent accumulations of alluvium and colluvium are present in the canyons and draws on-site.

Stratigraphy

The project area is underlain by engineered artificial fills, undocumented artificial fills, landslide debris, colluvium, alluvium, older alluvium, terrace deposits, upper and lower members of the Fernando Formation, and the Puente Formation. Figure 5.7-1, *Project Area Geologic Units*, shows the geologic units in the project area.

Puente Formation, Sycamore Canyon member (Tpsc). The Miocene-aged Sycamore Canyon member of the Puente Formation is on the far north side of the site. It was not explored in the subsurface but, based on observed outcrops and mapping by others, it is composed of conglomerates. The rock is described in the reviewed literature as moderately hard to hard, moist, and moderately to well cemented.

Fernando Formation, lower member (Tfl). The Pliocene-aged lower member of the Fernando Formation is on the northeastern portion of the site. It is composed of siltstone and clayey siltstone with minor fine-grained sandstone beds. The rock is moderately hard to hard and slightly moist to moist.

Fernando Formation, upper member (Tfu). The upper member of the Pliocene Fernando Formation is on the northeasterly to easterly portions of the site and composed of interbedded siltstones and conglomerates. The siltstones of the upper member of the Fernando Formation are moist, moderately hard to hard, with minor cemented zones. Minor fine-grained sandstone interbeds are within the siltstones. The siltstone is generally massive with locally well-bedded zones associated with the sandstone interbeds.

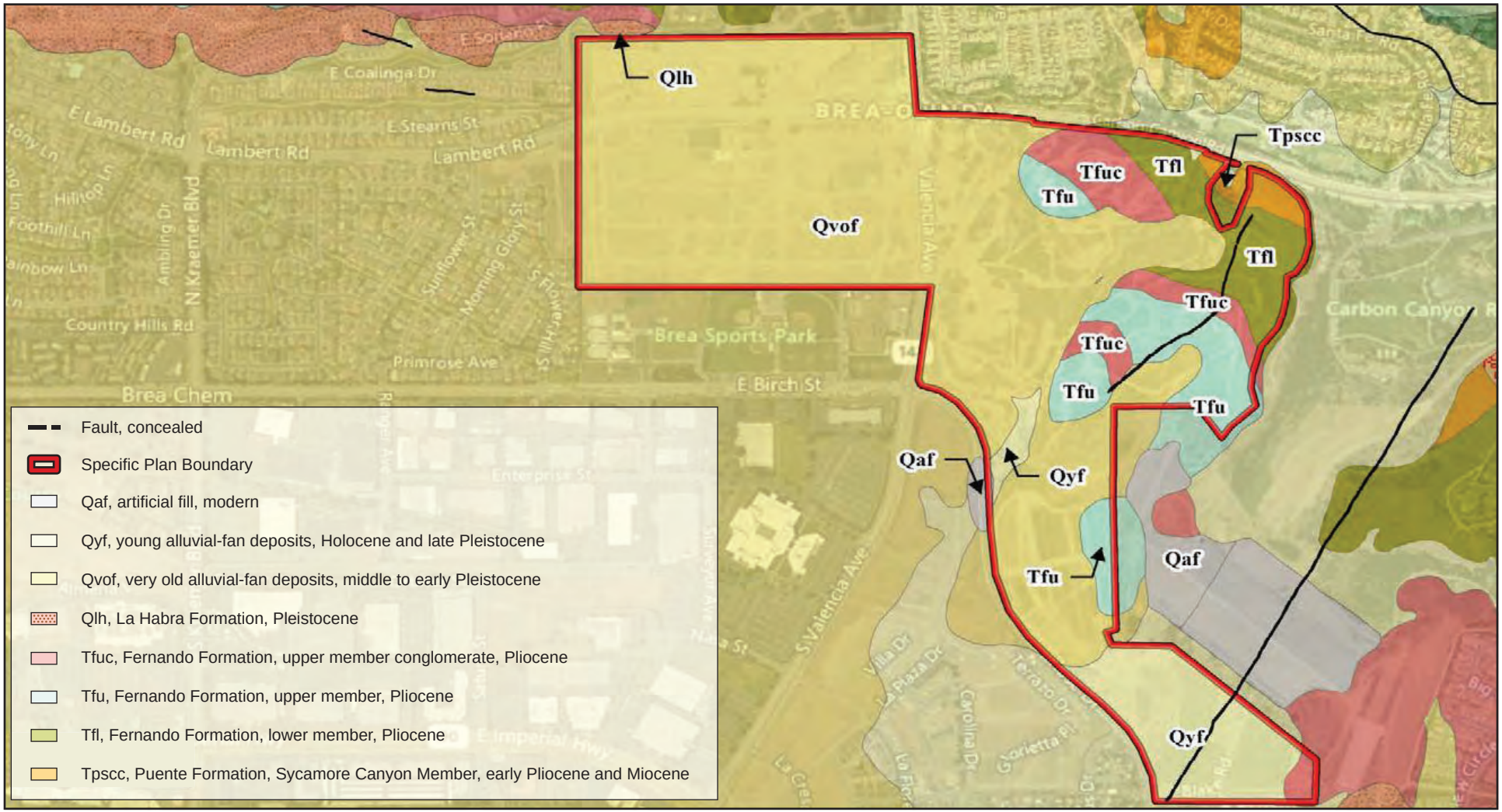
The conglomerates are subrounded to rounded pebble- to cobble-sized clasts that range from ½ inch to 6 inches in diameter. The cobbles are in a matrix of coarse to very coarse sand. The conglomerate is hard, poorly to well cemented, and locally fossiliferous.

Terrace Deposits (Qt). Pleistocene-aged terrace deposits are located throughout the central, north central, and western portions of the site. The terrace deposits are composed of sandy to clayey silts and silty sands, which are dark reddish brown, firm to stiff and dense, slightly moist to moist.

Older Alluvium (Qoal): Young Alluvial Fan Deposits (Qyf) and Very Old Alluvial Fan Deposits (Qvof). The late Pleistocene- to early Holocene-aged older alluvium is on the southeastern portion of the project. It is composed of silty to sandy clays and clayey to silty sands. The older alluvium is firm and medium dense to dense and stiff, slightly moist to moist, and predominantly dark reddish to yellowish brown.

Figure 5.7-1 - Project Area Geologic Units

5. Environmental Analysis



Source: Cogstone, 2019

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Alluvium (Qal). Recent alluvial soils are in the draws and canyons throughout the site and in the Carbon Canyon channel area below the Carbon Canyon retention dam. The alluvium is composed of clayey to sandy silt, silty sand, and silty clay. The soils are loose and soft to firm and medium dense and dry to moist.

Colluvium (Qcol). Recent colluvial soils are present on the slope flanks throughout the hillier portions of the project site. The colluvium consists of silty to sandy clays, clayey silts, and silty sands in a slightly moist to moist and soft to firm condition.

Landslide Debris (Qls). Two questioned landslides have been mapped on the northeast side of the site. The slides were mapped based on geomorphic expression and aerial photographic review and have not been explored previously. The landslide debris, if it exists, is derived from the siltstone member of the Fernando Formation.

Undocumented Artificial Fill (Qaf). Undocumented artificial fills are scattered over the site. The fills are associated with access road construction, oil field exploration/production, and past and present agricultural uses. The fills are derived from the surrounding soils and are dry to slightly moist and loose/soft.

Engineered Artificial Fill (afel, afe2, afe3). Engineered artificial fill was placed on-site as part of the development of the adjacent Shea Homes project, the Brea Sports Park, and the Carbon Canyon Dam Sewer project.

5.7.2 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:

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.)
- 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 waste water disposal systems where sewers are not available for the disposal of waste water.

G-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Chapter 8, *Impacts Found Not to Be Significant*, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold G-5

This impact will not be addressed in the following analysis.

5.7.3 Plans, Programs, and Policies

Regulatory Requirements

PPP GEO-1 The proposed project will be designed and constructed in accordance with the California Building Code (CBC), which is based on the International Building Code and has been adopted by the City of Brea. New construction, alteration, or rehabilitation shall comply with applicable City ordinances and/or by the most recent City building and seismic codes in effect at the time of project design. In accordance with Section 1803.2 of the 2019 CBC, a geotechnical investigation is required that must evaluate soil classification, slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction, and expansiveness, as determined by the City Building Official. The geotechnical investigation must be prepared by registered professionals (i.e., California Registered Civil Engineer or Certified Engineering Geologist). Recommendations of the report pertaining to structural design and construction recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic considerations must be incorporated into the design and construction of the project.

PPP HYD-1 The proposed project is required to be developed in compliance with the following state, regional, and local regulations concerning grading, stormwater, and water quality control:

State

- National Pollutant Discharge Elimination System General Construction Permit: Notice of Intent and Storm Water Pollution Prevention Plan Requirements
- State Water Resources Control Board General Industrial Activities Storm Water Permit

Regional

- Santa Ana Regional Water Quality Control Board Waste Discharge Permits and Water Quality Certifications
- Orange County Municipal Separate Storm Sewer Systems Permit
- Orange County Model Water Quality Management Plan and Technical Guidance Document
- Orange County Drainage Area Management Plan: New Development/Significant Redevelopment Program
- Orange County Hydrology Manual and 1996 Addendum
- Orange County Water District Groundwater Replenishment Program
- Orange County Flood Control District Local Implementation Plan 2019

5.7.4 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 5.7-1: The proposed project would not directly or indirectly cause substantial adverse effect, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. [Threshold G-1.i]

The project site is not subject to surface rupture of a known active earthquake (Alta 2018). Based on a review of the Alquist-Priolo Earthquake Fault Zoning Map and the City of Brea General Plan Public Safety Element, the project site is not in an Alquist-Priolo Zone (CGS 2015; Brea 2003). Figure 5.7-2, *Geologic and Seismic Hazards*, shows the Alquist-Priolo earthquake fault zones. The proposed project would not directly or indirectly cause substantial adverse effect involving fault rupture.

Level of Significance Before Mitigation: No impact.

Impact 5.7-2: The proposed project would not directly or indirectly cause substantial adverse effect, including the risk of loss, injury, or death involving strong seismic ground shaking. [Threshold G-1.ii]

There are several large active fault systems in the region surrounding the project site. The prominent regional fault systems are the Whittier, Newport-Inglewood, Elsinore, San Jacinto, and San Andreas faults and Elysian Park seismic zone. The nearest fault system is the Whittier Fault, approximately 2,000 feet to the north. This fault is the main spur of the Elsinore fault system and extends northwesterly from Santa Ana Canyon through the Puente Hills to the Santa Monica Mountains. The Elysian Park Seismic Zone, an active blind thrust fault line, lies approximately two miles westerly of the project site. This seismic zone is a part of the north Los Angeles Thrust Belt, which is marked by blind thrust faults (not reaching to the earth's surface)

and associated anticlines, which are expressed as the low hills that ring the northern Los Angeles area. The second nearest fault system is the Newport-Inglewood fault system, approximately 19 miles southwest of the project site.

The type and magnitude of seismic hazards affecting a site are dependent on the distance to the fault and the intensity and magnitude of the seismic event. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction and/or ground lurching and earthquake-induced landslides. There are no active nor potentially active faults known to exist along or across the project site but considering proximity to multiple fault systems in the region, such as the Whittier and Newport-Inglewood faults, the proposed project development could subject persons on-site to strong ground shaking.

However, structures for human occupancy must be designed to meet or exceed 2019 CBC standards for earthquake resistance. The CBC has provisions for earthquake safety based on factors such as occupancy type, the types of soil and rock on-site, and the strength of ground motion with a specified probability at the site. The required geotechnical investigation for the proposed project, pursuant to PPP GEO-1, would calculate seismic design parameters that must be used in the design of the proposed building, pursuant to CBC requirements.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP GEO-1.

Impact 5.7-3: The proposed project would not directly or indirectly cause substantial adverse effect related to on- or offsite liquefaction, landslide, lateral spreading, subsidence, or collapse. [Threshold G-1.iii, G-1.iv, and G-3]

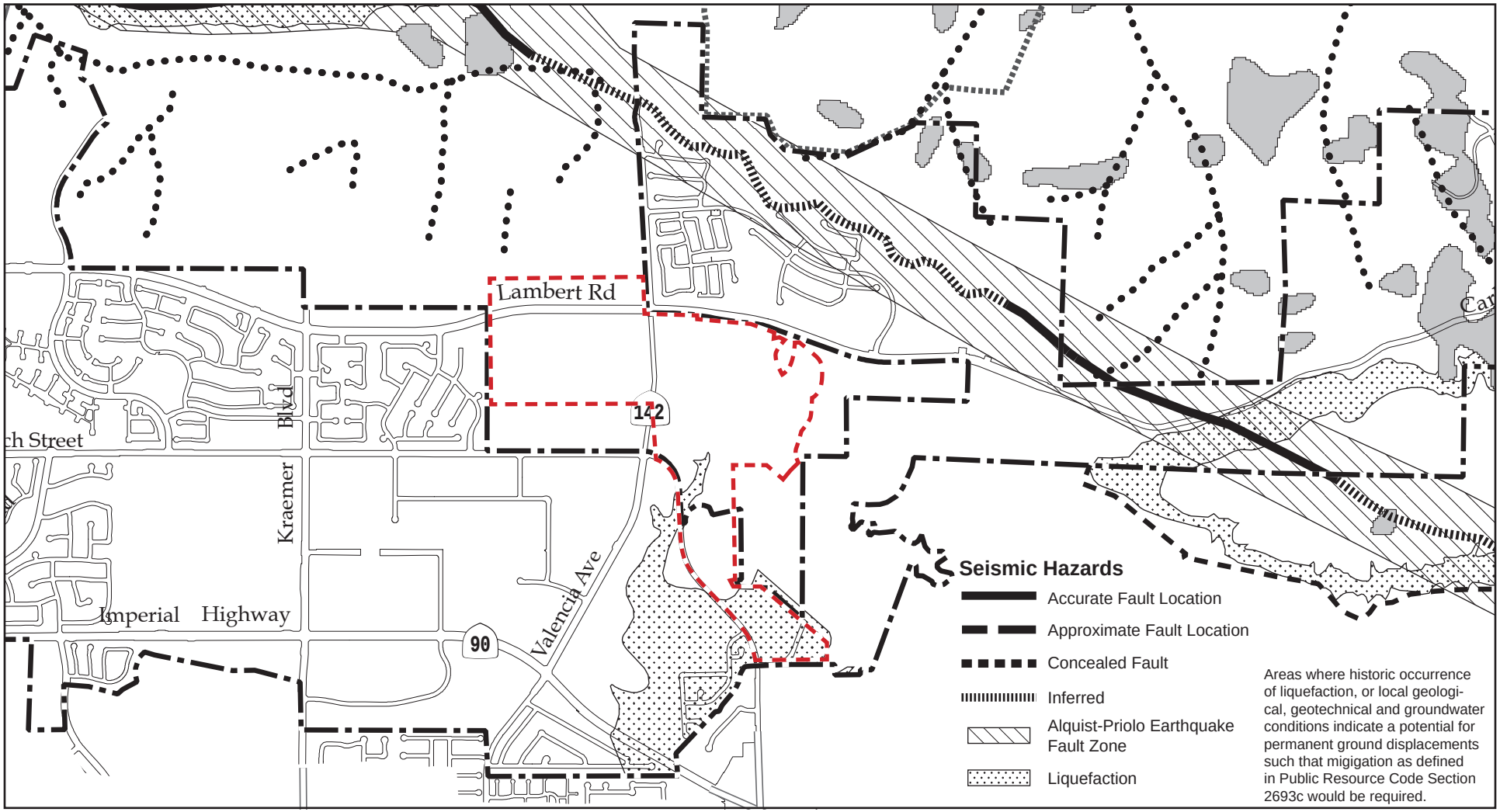
Liquefaction and Lateral Spreading

Liquefaction refers to loose, saturated sand or gravel deposits that lose their load supporting capability when subjected to intense shaking. Any buildings or structures on these sediments may float, sink, or tilt as if on a body of water. Based on the limited subsurface investigation, liquefaction potential of the project site is considered low due to the depth of the groundwater (51 feet) measured on-site. However, the State of California Seismic Hazards Zone Map for the Yorba Linda Quadrangle (CGS 2015) identifies areas on the eastern portion of the project site that may have a potential for liquefaction. Lateral spreading refers to lateral displacement of large, surficial blocks of soil as a result of liquefaction in a subsurface layer. The project site contains areas with potential for liquefaction; therefore, it also has potential for lateral spreading.

Reducing impacts for liquefaction/dynamic settlement potential include removal and replacement with compacted, drained fills; ground modification; and/or designing for potential settlement of liquefiable materials.

Figure 5.7-2 - Geologic and Seismic Hazards

5. Environmental Analysis



Source: City of Brea, 2003

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Earthquake-Induced Landslides

The project site contains slopes and areas susceptible to landslides. The northeastern side of the site can be characterized as moderate to locally steep hillside terrain with eroded canyons. Natural slopes in these canyon areas vary in slope ratio from approximately 1:1 to 5:1 (horizontal : vertical). The State of California Seismic Hazards Zone Map for the Yorba Linda quadrangle identified natural slopes onsite that may be subject to seismically induced landslides.

Subsidence and Collapsible Soils

Collapsible soils shrink when wetted and/or subjected to a load. Based on the data from the previous subsurface investigation and laboratory testing, weathered older alluvium and terrace deposits, highly weathered bedrock, colluvium, alluvium, undocumented artificial fill, and the landslide debris are likely to be compressible. The colluvium, alluvium, and portions of the older alluvium and terrace deposits on-site are subject to hydrocollapse. Hydrocollapse is when loose dry soils undergo rapid consolidation (collapse) when wetted. The presence of such collapsible soils below fills can cause structural damage to buildings.

Compressible and collapsible soils are typically mitigated by using a combination of overexcavation of the susceptible soils and recompaction as engineered fills. These techniques may be used in conjunction with enhanced foundation design.

The proposed project has potential to be impacted by on- or off-site liquefaction, lateral spreading, landslide, subsidence, or collapse. The proposed project would be designed and constructed to protect structural integrity and infrastructure against geologic hazards per the recommendations in a geotechnical report required under PPP GEO-1 and prepared in accordance with CBC requirements and reviewed and approved by the City of Brea. The geotechnical investigation report will include recommendations for reducing impacts from adverse subsurface soil conditions, such as removal and/or overexcavation or soils and replacement with recompacted engineered fills to meet the required state and local regulations.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP GEO-1.

Impact 5.7-4: Project development could cause substantial soil erosion or the loss of topsoil. [Threshold G-2]

Erosion is a natural process of the movement of soil from place to place. The main natural agents of erosion in the region are flowing water and wind. Erosion can be accelerated dramatically by ground-disturbing activities if effective erosion control measures are not used. Soil can be carried off construction sites or bare land by wind and water, and tracked off construction sites by vehicles.

The project applicant is required to comply with the National Pollutant Discharge Elimination System permit from the State Water Resources Control Board, including submittal of a Notice of Intent and preparation of a Storm Water Pollution Prevention Plan, which will specify best management practices to minimize stormwater pollution from project construction, including erosion and sediment. The project construction

contractor would implement the specified best management practices. At project completion, the project site would be developed with buildings, surface parking, walkways and other paved areas, and landscaping; thus, soil on-site would not be susceptible to substantial erosion.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP HYD-1.

Impact 5.7-5: The project site is not located on expansive soils that create substantial direct or indirect risks to life or property. [Thresholds G-4]

Expansive soils contain substantial amounts of clay that swell when wetted and shrink when dried; the swelling or shrinking can shift, crack, or break structures built on such soils. The expansion potential of on-site soils during grading would likely range from "very low" to "high" (Alta 2018). However, the presence of expansive soil is commonly and effectively reduced by various techniques such as 1) proper design of foundations, slabs, streets, and other improvements subject to the influence of the soils; 2) overexcavation of the expansive soils/bedrock and replacement with less-expansive fill soils; 3) selective grading techniques to place more highly expansive soils well below foundation elements; 4) presaturation techniques to lessen expansion potential; 5) control of surface and subsurface drainages to prevent moisture variations; and 6) combinations of these various techniques.

Therefore, to ensure that risks from expansive soils remain less than significant, the geotechnical investigation report required under PPP GEO-1 will include recommendations for maintaining the moisture content in the slab and subgrade to minimize potential soil expansion after grading and prior to concrete placement.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP GEO-1.

Impact 5.7-6: Project development could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. [Threshold G-6]

The project site is mapped as modern artificial fill, Pleistocene to Holocene alluvial fans, the La Habra Formation, the Fernando Formation, and the Puente Formation. A record search of the project area and a one-mile radius was conducted as part of the Paleontological and Cultural Resources Assessment, and this report is included as Appendix E to the DEIR. No fossil localities are known from the project area or within a mile of the project site, but numerous localities have been found within 10 miles of the project site in the same sedimentary units that are present in the project site. These units include unnamed Pleistocene deposits, the La Habra Formation (Pleistocene), Fernando Formation (Pliocene), Puente Formation, and Sycamore Canyon Conglomerate (late Miocene to Pliocene). Additionally, a small oyster fossil was identified in the project area in the Fernando Formation that dates to Pliocene age. Appendix B of the Paleontological and Cultural Resources Assessment (DEIR Appendix E) includes results of the paleontological resources records search.

Paleontological resources sensitivity of the project area was assessed by using the Potential Fossil Yield Classification (PFYC) system developed by Bureau of Land Management. Fossil resources occur in geologic

units (e.g., formations or members), and the PFYC system has a multilevel scale based on demonstrated yield of fossils. Using the PFYC system, geologic units are classified according to the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils as well as their sensitivity to adverse impacts within the known extent of the geological unit. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher PFYC value; instead, the relative abundance of localities is intended to be the major determinant for the value assignment.

For example, the artificial fill has a very low potential for fossils and is assigned PFYC 1. The upper eight feet of the late Pleistocene to Holocene young alluvial fan is assigned PFYC 2, a low potential for fossils at the surface, and the level increases to PFYC 3a, a moderate but patchy sensitivity, by eight feet below the original ground surface. Figure 5.7-3, *Paleontological Sensitivity of the Project*, illustrates these classifications on the project site. Both the upper member conglomerate of the Fernando Formation (*Tfu*) and the Sycamore Canyon member conglomerate of the Puente Formation (*Tpsc*) are assigned a low potential for fossils of PFYC 2 due to the coarseness of these deposits. The early to middle Pleistocene very old alluvial fan, the La Habra Formation, and the nonconglomeratic facies of the upper and lower members of the Fernando Formation (*Tfl*) are assigned a moderate and patchy sensitivity. The majority of the project site is assigned low to moderate sensitivity, PFYC 2 to PFYC 3a, and at PFYC 3, a paleontological resource impact mitigation program and full-time monitoring would be required to reduce potential impacts.

Level of Significance Before Mitigation: Potentially significant impact.

5.7.5 Cumulative Impacts

Geology and soils impacts related to the proposed project would be specific to that site and its users and would not be common or contribute to the impacts on other sites. Compliance with applicable state and local building regulations would be required of all development in Brea and surrounding cities. Individual projects would be designed and built in accordance with applicable standards in the CBC and the individual building regulations of local jurisdictions (see PPP GEO-1), including pertinent seismic design criteria. Site-specific geologic hazards would be addressed by the geotechnical report required for each development project. These geologic investigations would identify the specific geologic and seismic characteristics on a site and provide guidelines for engineering design and construction to maintain the structural integrity of proposed structures and infrastructure. Therefore, compliance with applicable state and local building regulations and standard engineering practices related to seismic and geologic hazard reduction would prevent significant cumulative adverse impacts associated with geologic and seismic hazards.

Impacts related to paleontological resources would have site-specific impacts, and other cumulative projects would be required to be assessed and mitigated, if necessary. Provided that site-specific impacts are reduced to a less than significant level, no cumulatively significant impacts are anticipated.

Impacts of the proposed project and other development projects on geology and soils would not be cumulatively considerable after compliance with existing regulations and implementation of site-specific mitigation measures.

5.7.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.7-1, 5.7-2, 5.7-3, 5.7-4, and 5.7-5.

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

- **Impact 5.7-6** The proposed project could result in discovery of paleontological resources during excavation of soils beyond eight feet or greater with Potential Fossil Yield Classification 3 (PFYC 3) or greater.

5.7.7 Mitigation Measures

Impact 5.7-6

GEO-1 The project applicant shall implement a Paleontological Resource Impact Mitigation Program and conduct full-time monitoring by a qualified paleontologist when disturbing deposits with a Potential Fossil Yield Classification (PFYC) ranking of 3 or greater. If unanticipated fossils are unearthed during construction, work shall be halted in that area until a qualified paleontologist can assess the significance of the find. Sediment samples shall be collected in the deposits and processed to determine the small-fossil potential in the project area, and any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution. Work may resume immediately a minimum of 50 feet away from the find. This procedure shall be included in the Worker Environmental Awareness Program training provided to construction personnel.

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated shall determine the scientific significance of paleontological resources. Fossils are considered to be scientifically significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct.

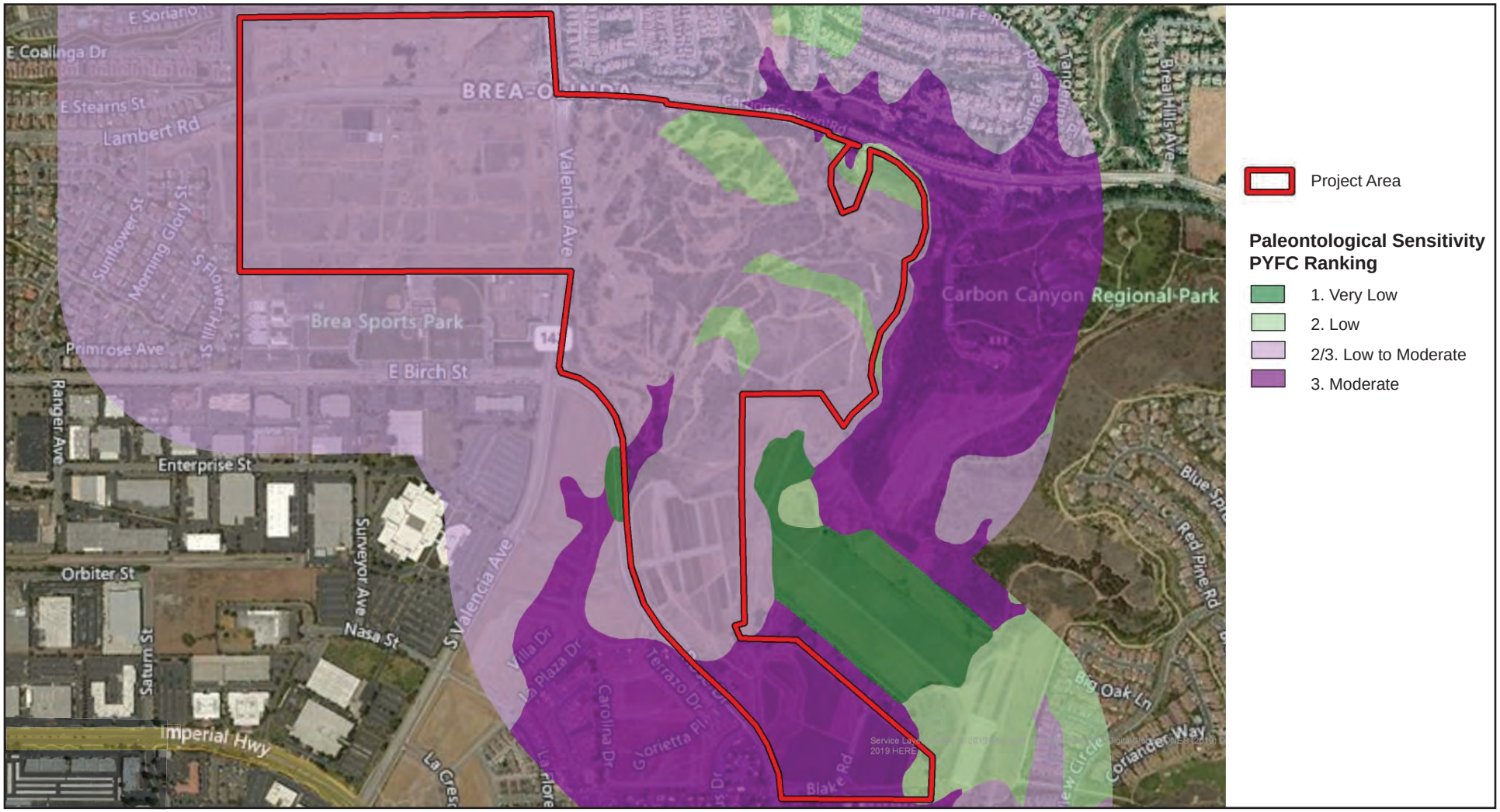
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein.

3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas.

4. The fossils demonstrate unusual or spectacular circumstances in the history of life.

5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation and are not found in other geographic locations.

Figure 5.7-3 - Paleontological Sensitivity of the Project
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Source: Cogstone, 2019

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If fossils are considered to be scientifically significant, the fossils shall be curated in perpetuity at an accredited repository after excavations have finished, and nonvertebrate fossils (plants, shells, trace fossils, etc.) may be collected as a representative sample when numerous fossils of the same species are present.

5.7.8 Level of Significance After Mitigation

Impact 5.7-6

Implementation of Mitigation Measure GEO-1 would ensure that impacts to paleontological resources are reduced to a less than significant level. Therefore, impacts would be reduced to a less than significant level, and no significant and unavoidable impact would remain.

5.7.9 References

Alta California Geotechnical Inc. 2018, December 19. EIR-Level Geotechnical Assessment, Brea Central Property, City of Brea, County of Orange, California. DEIR Appendix F.

Brea, City of. 2003, August 19 (adopted). The City of Brea General Plan.

California Geological Survey (CGS). 2015, December 4. Earthquake Zones of Required Investigation Yorba Linda Quadrangle.

Cogstone. 2019, March. Paleontological and Cultural Resources Assessment for the Brea 265 Specific Plan, City of Brea, Orange County, California. DEIR Appendix E.

LGC Geotechnical Inc. 2019, February 6. Third-Party Review of Alta Report dated December 19, 2018, and Site Reconnaissance Visit, Proposed Brea 265 Residential Development, City of Brea, California. DEIR Appendix G.

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5.8 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (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.

This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (South Coast AQMD). GHG emissions modeling was conducted using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0, and model outputs are in Appendix C of this DEIR.

Terminology

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e).** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.8.1 Environmental Setting

5.8.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6),

hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs applicable to the proposed project are briefly described.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.8-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 280 MT of CO_2.[3]

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017a). However, state and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[3] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 5.8-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Carbon Dioxide (CO_2)	Methane[1] (CH_4)	Nitrous Oxide (N_2O)
Second Assessment			
Atmospheric Lifetime (Years)	50 to 200	12 (±3)	120
Global Warming Potential Relative to CO_2[2]	1	21	310
Fourth Assessment			
Atmospheric Lifetime (Years)	50 to 200	12	114
Global Warming Potential Relative to CO_2[2]	1	25	298
Fifth Assessment[3]			
Atmospheric Lifetime (Years)	50 to 200	12	121
Global Warming Potential Relative to CO_2[2]	1	28	265

Sources: IPCC 1995; IPCC 2007; IPCC 2013.

1 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

3 The GWP values in the IPCC's Fifth Assessment Report (IPCC 2013) reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, the Fourth Assessment Report's GWPs were used to maintain consistency with statewide GHG emissions modeling in CalEEMod. In addition, the 2017 Scoping Plan Update was based on the AR4 GWP values.

California's GHG Sources and Relative Contribution

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2007). Based on these GWPs, California produced 418.2 $MMTCO_2e$ of GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high-GWP gases (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).

Since the peak level in 2004, California statewide GHG emissions dropped below the 2020 GHG limit of 418.2 $MMTCO_2e$ in 2016 and have remained below the 2020 GHG limit since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 $MMTCO_2e$ lower than the 2020 GHG limit. Per-capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.5 $MTCO_2e$ per person in 2019, a 25 percent decrease. Transportation emissions continued to decline in 2019 as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases comprised 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 45 percent since the 2001 peak, though the state's gross domestic product grew 63 percent during this period (CARB 2021).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs 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). The years from 2014 through 2016 showed unprecedented

temperatures, with 2014 being the warmest (OEHHA 2018). 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 5.6 to 8.8°F, depending on emissions levels (CNRA 2019).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower- and middle-elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). Overall, California has become drier over time, with five of eight years of severe to extreme drought occurring between 2007 and 2016, and unprecedented dry years in 2014 and 2015 (OEHHA 2018). Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years from 2012 to 2015 (OEHHA 2018). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if we could immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.8-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are unavoidable. Global climate change risks to California are shown in Table 5.8-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Table 5.8-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity

Table 5.8-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
	Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006; CEC 2009; CCCC 2012; CNRA 2014.

Specific climate change impacts that could affect the project include:

- **Water Resources Impacts.** By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the state can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months (CCCC 2012).

- **Wildfire Risks.** Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location (CCCC 2012).

- **Health Impacts.** Many of the gravest threats to public health in California stem from the increase of extreme conditions—principally, more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California (CCCC 2012).

- **Increase Energy Demand.** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity will need to be produced to make up for both the loss in capacity and the growing demand (CCCC 2012).

5.8.1.2 REGULATORY BACKGROUND

This section describes the federal, state, and local regulations applicable to GHG emissions.

Federal Laws

United States Environmental Protection Agency

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding (US EPA 2022). The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions, and per South Coast AQMD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Reporting Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2021 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized updated CAFE and GHG emissions standards for passenger cars and light trucks and established new, less stringent standards covering model years 2021 through 2026, known as SAFE. However, a consortium of automakers and California agreed on a voluntary framework to reduce emissions as an alternate path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. In late 2020, GM and Nissan also agreed to the voluntary framework. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and gives industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet these standards (CARB 2019). In addition, per Executive Order 13990 (EO 13990) issued by President Biden on January 20, 2021, the EPA is reconsidering SAFE for the purpose

of rescinding the rule. The reconsideration process is ongoing after a public hearing held on June 2, 2021, which also started the public comment period that ended July 6, 2021. On August 5, 2021, the National Highway Traffic Safety Administration announced new proposed fuel standards in response to EO 13990. Fuel efficiency under the standards proposed would increase 8 percent annually for model years 2024 to 2026 and increase the estimated fleetwide average by 12 mpg for model year 2026 compared to model year 2021 (NHTSA 2021).

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy rule, which was crafted under the direction of President Trump's Energy Independence EO and became effective August 19, 2019. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants. However, the Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is currently assessing options on potential future regulations.

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and B-30-15, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-03-05

EO S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

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

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05.

CARB 2008 Scoping Plan

The first Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory

reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline could be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and reset the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, slightly higher at 431 $MMTCO_2e$ (CARB 2014).

As identified in the update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014).

Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and required state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It required the Natural Resources Agency to conduct triennial updates of the California adaption strategy, "Safeguarding California," to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197, making the EO B-30-15 goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and required CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

EO B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements,

to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten limits on emissions of criteria air pollutants and toxic air contaminants across a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which includes increasing ZE buses and trucks.
- Increased stringency of the Low Carbon Fuel Standard (LCFS) (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, uses NZE technology, and deploys ZE trucks.
- Implementation of the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt aggressive, quantitative, locally appropriate goals that align with the statewide per capita targets and sustainable development objectives, and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the reduction percentages necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32.

For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the "business as usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 5.8-3, *2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, the SB 375 program for more vibrant communities, etc. However, it does not include the new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 5.8-3 2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	398
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target	**60**

Source: CARB 2017b.

Table 5.8-4, *2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target*, provides estimated GHG emissions by sector at 1990 levels, and the range of emissions for each sector estimated for 2030.

Table 5.8-4 2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-4% to -8%
Residential and Commercial	44	38-40	-9% to -14%
Electric Power	108	30-53	-51% to -72%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-8% to -15%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-27% to -32%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	294-339	-21% to -32%
Cap-and-Trade Program	NA	34-79	NA
Total	**431**	**260**	**-40%**

Source: CARB 2017b
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan 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 (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October 2018 and were applicable to SCAG's 2019 update to the regional transportation plan / sustainable communities strategy (RTP/SCS). CARB's updated SB 375 targets for the SCAG region were 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).

The 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" reductions 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 proposed 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 SCSs to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

SCAG's 2016-2040 RTP/SCS

SB 375 required the MPOs to prepare a sustainable communities strategy in their regional transportation plans. For the SCAG region, the 2020-2045 RTP/SCS, *Connect SoCal*, was adopted on September 3, 2020, and is an update to the 2016-2040 RTP/SCS (SCAG 2020). In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land uses strategies in development of the SCAG region through horizon year 2045 (SCAG 2020). It forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. *Connect SoCal* includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods; expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2020).

Transportation Sector Specific Regulations

Assembly Bill 1493

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 was 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 years 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 Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combined the control of smog, soot, and GHGs and requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. EO S-01-07 set a declining standard for GHG emissions measured in grams of CO_2e per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applied to refiners, blenders, producers, and importers of transportation fuels, and used market-based mechanisms to allow these providers to choose the most economically feasible method to reduce emissions during the "fuel cycle."

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The EO directed an increase in the number of ZE vehicles in California's state fleet through the normal course of fleet replacement, so that at least 10 percent of fleet purchases of light-duty vehicles would be ZE by 2015 and at least 25 percent by 2020. The EO also established a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed EO N-79-20 with the goal that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, this EO identified fleet goals of 100 percent ZE drayage trucks by 2035 and 100 percent ZE medium- and heavy-duty vehicles in the state by 2045, for all operations where feasible. Additionally, the EO identifies a goal for the state to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the RPS established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. EO S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which replaced the SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers will consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. The bill also establishes an overall 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.

Executive Order B-55-18

EO 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." EO 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.

Energy Efficiency Regulations

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 CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). 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. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018, and went into effect on January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 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 2018b). Under the 2019 standards, nonresidential buildings are generally 30 percent more energy efficient than under the 2016 standards, and single-family homes are generally 7 percent more energy efficient (CEC 2018a). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would generally use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018a).

Furthermore, on August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards become effective and replace the existing 2019 standards on January 1, 2023. The 2022 standards

would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. 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.[4] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2019 CALGreen standards became effective January 1, 2020.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR secs. 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (Public Resources Code secs. 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act required that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and required recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

[4] The green building standards became mandatory in the 2010 edition of the code.

AB 1327

AB 1327, the California Solid Waste Reuse and Recycling Access Act (Public Resources Code secs. 42900 et seq.) required 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.

AB 1826

In October 2014 Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings that consist of five or more units. 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.

Water Efficiency Regulations

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 required local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also required the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in

methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017a). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces their particulate emissions by over 80 percent (CARB 2017a). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

Local

City of Brea Sustainability Plan

The City approved the Brea Sustainability Plan: Leadership in Energy Efficiency (Sustainability Plan) in fall 2012; it presents resource efficiency goals matched with policies and implementation steps to save energy, water, and other resources, aligning the city for AB 32 compliance (Brea 2012). The Sustainability Plan is based in part on the City's 2012 Greenhouse Gas Inventory results, which presents data for a 2010 baseline year, and on the Energy Action Plan prepared for the city in conjunction with SCE and the Energy Coalition. Though the Sustainability Plan is not a qualified climate action plan as defined under CEQA Guidelines Section 15183.5(b), it included goals and measures to support achieving an emissions reduction of 34,772 $MTCO_2e$ to reach the 1990 emissions level of 517,231 $MTCO_2e$ by year 2020 (Brea 2012).

To meet the defined goals and policies, the Sustainability Plan provided phased measures that included an implementation time frame and estimated CO_2 mitigation for the city. In general, the Sustainability Plan includes goals and measures that cover building energy efficiency, waste management and recycling, sustainable building practices, land use and transportation planning policy, public and active transit, and outreach. Overall, the Sustainability Plan includes 88 measures to achieve its emissions reduction target. These measures are divided over three implementation phases. Phase I, intended to be implemented between 2013 and 2014, consisted of 26 total measures that relied on ordinances, public education, utility programs, financing, and public/private partnerships. Implementation of these measures were estimated to reduce emissions throughout the city by 12,528 $MTCO_2e$. Phase II and III would be based on the City's economic conditions, additional regulation, technological advances, and financing options. These two phases built on the measures in Phase I, especially measures pertaining to development and mobility, to further progress toward sustainability through emissions reduction. Phase II included 46 measures implemented between 2015 and 2017 and projected to reduce emissions by 16,359 $MTCO_2e$. Phase III included 16 measures to be carried out between 2018 and 2020. Its implementation would result in a reduction of 6,257 $MTCO_2e$. In total, implementation of these three phases would achieve an emissions reduction of 35,144 $MTCO_2e$, which would exceed the reduction target of 34,772 $MTCO_2e$.

5.8.1.3 EXISTING CONDITIONS

The project site has been used for oil production continuously since the early 1900s. Of the approximately 190 wells drilled on the site, 110 remain in operation and produce approximately 500 barrels per day. Current emissions generated from the existing operations are associated with any operations-related vehicle trips made to and from the project site and from related equipment.

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:

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.

South Coast Air Quality Management District

The South Coast AQMD has adopted a significance threshold of 10,000 $MTCO_2e$ per year for permitted (stationary) sources of GHG emissions for which it is the designated lead agency. To provide guidance to local lead agencies on determining the significance of GHG emissions in CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) in September 2010, South Coast AQMD identified a tiered approach for evaluating GHG emissions for development projects where South Coast AQMD is not the lead agency (South Coast AQMD 2010a). The tiered approach has not been formally adopted by South Coast AQMD.

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (e.g., city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.
- For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. Project-related GHG emissions include on-road transportation, energy use, water use, wastewater generation, solid waste disposal, area sources, off-road emissions, and construction activities. The South Coast AQMD Working Group identified that because construction activities would result in a "one-time" net increase in GHG emissions, construction activities should be amortized into the operational phase GHG emissions inventory based on the service

life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation. The South Coast AQMD identified a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types. This bright-line screening-level threshold is based on a review of the database of CEQA projects from the Governor's Office of Planning and Research. Based on review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line threshold. Therefore, projects that do not exceed the bright-line threshold would have a nominal, less than cumulatively considerable impact on GHG emissions. Though three thresholds were identified, South Coast AQMD recommends use of 3,000 $MTCO_2e$ per year ($MTCO_2e$/yr) for all project types (South Coast AQMD 2010b).

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted. South Coast AQMD identified an efficiency target for projects that exceed the bright-line threshold: a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level projects (e.g., general plans). Service population is generally defined as the sum of residential and employment population of a project. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[5]

For purposes of this analysis, the bright-line threshold of 3,000 $MTCO_2e$/yr is used to determine the project's impacts.

Mojave Desert Air Quality Management District

The anticipated site remediation may include the transport of impacted soils to an offsite location outside of the South Coast AQMD jurisdictional area. For purposes of this analysis, it is assumed that any impacted soil removed offsite would be transported to a receiving location in Adelanto. The primary route would take a haul truck through the SoCAB and the Mojave Desert Air Basin (MDAB), which is managed by the Mojave Desert Air Quality Management District (MDAQMD). The MDAQMD has adopted thresholds for GHG emissions generated in the MDAB. Emissions from transport of impacted soil from remediation activities is also compared the MDAQMD CEQA thresholds (MDAQMD 2016) shown in Table 5.8-5, *MDAQMD Greenhouse Gas Significance Thresholds*.

Table 5.8-5 MDAQMD Greenhouse Gas Significance Thresholds

Annual (tons/year)	Daily[1] (lbs/day)
100,000	548,000

Source: MDAQMD 2016.
[1] Project with phases shorter than one year, including construction activities, can be compared to the daily value.

[5] South Coast AQMD took the 2020 statewide GHG reduction target for "land use only" GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

5.8.3 Plans, Programs, and Policies

PPP GHG-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2019 Building Energy Efficiency Standards were effective on January 1, 2020, and the 2022 Building Energy Efficiency Standards will become effective January 1, 2023.

PPP GHG-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new nonresidential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen secs. 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).

PPP GHG-3 California's Green Building Standards Code (CALGreen) requires the recycling and/or salvaging for reuse at minimum of 65 percent of the nonhazardous construction and demolition waste generated during most "new construction" projects (CALGreen secs. 4.408 and 5.408). Construction contractors are required to submit a construction waste management plan that identifies the construction and demolition waste materials to be diverted from disposal by recycling, reused on the project, or salvaged for future use or sale and the amount (by weight or volume).

PPP GHG-4 Construction activities are required to adhere to Title 13 California Code of Regulations Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

PPP GHG-5 New buildings are required to adhere to the California Green Building Standards Code and Water Efficient Landscape Ordinance requirements to increase water efficiency and reduce urban per capita water demand.

PPP GHG-6 CARB's Renewable Portfolio Standard (RPS) is a foundational element of the State's emissions reduction plan. These mandates apply directly to investor-owned utilities, which in the case of the proposed project is Southern California Edison. On September 10, 2018, Senate Bill 100 was signed into law and established the following RPS targets: 50 percent renewable resources target by December 31, 2026, and 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030.

PPP GHG-7 On January 18, 2007, Governor Arnold Schwarzenegger issued Executive Order S-1-07 requiring the establishment of a Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS was amended in 2011 and readopted in 2015. This statewide goal required that California's transportation fuels reduce their carbon intensity by at least 10 percent by 2020.

PPP GHG-8 The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks under the Federal Corporate Average Fuel Economy Standards. The federal legislation requires a fleetwide average of 35 miles per gallon to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020.

PPP GHG-9 On July 22, 2002, Governor Gray Davis signed Assembly Bill 1493 (Pavley) requiring CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. The standards set within the Pavley regulations are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016. California petitioned the EPA in December 2005 to allow these more stringent standards, and California executive agencies have repeated their commitment to higher mileage standards. On July 1, 2009, the EPA granted California a waiver that enabled the state to enforce stricter tailpipe emissions on new motor vehicles.

PPP GHG-10 SB 375 requires the reduction of GHG emissions from light trucks and automobiles through land use and transportation efforts that will reduce vehicle miles traveled. In essence, SB 375's goal is to control GHGs by curbing urban sprawl and through better land use planning. SB 375 essentially becomes the land use contribution to the GHG reduction requirements of AB 32, California's global warming bill enacted in 2006, and SB 32.

5.8.4 Environmental Impacts

5.8.4.1 METHODOLOGY

This GHG evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG impacts are likely in conjunction with the proposed project. South Coast AQMD has published guidelines that are intended to provide local governments with guidance for analyzing and mitigating environmental impacts, and they were used in this analysis. The analysis in this section is based on buildout of the proposed project as modeled using CalEEMod, version 2020.4.0, for the following sectors:

- **Transportation.** Based on daily trip generation and VMT data from LLG (see Appendix N). The proposed project would generate 9,351 weekday average daily trips (ADT), 12,389 Saturday ADTs, and 10,333 Sunday ADTs at full buildout. Additionally, an average trip distance of 8.95 miles per vehicle is used, based on the calculated 83,659 VMT per weekday for year 2035.

- **Area Sources.** Area sources generated from use of consumer products and cleaning supplies are based on CalEEMod default emission rates and on the assumed building and land use square footages. For fireplaces, it is assumed that single-family detached and attached homes ((i.e. townhomes) are equipped with gas fireplaces per South Coast AQMD Rule 445.

- **Energy.** The CalEEMod default energy rates, which are based on the 2019 Building Energy Efficiency Standards, are used to quantify GHG emissions from energy use (i.e., natural gas and electricity). Use of the CalEEMod default energy rates results in conservative estimates compared to the recently adopted 2022 Building Energy Efficiency Standards because it is anticipated new buildings under the 2022 Standards would result in higher electricity use and lower natural gas use compared to 2019 standards. Furthermore, the carbon intensity factor is based on the CO_2e intensity factor of 512 pounds per megawatt hour (lbs/MWh) as reported in Southern California Edison's 2020 Sustainability Report (SCE 2020). Additionally, because buildout is anticipated for year 2035, the CO_2e intensity factor of 512 lbs/MWh is adjusted to account for the year 2027 RPS goal of 52 percent, which results in a CO_2e intensity factor of 373 lbs/MWh. Overall, using the AR4 GWPs and the default CalEEMod intensity factors of 0.033 lb/MWh for CH_4 and 0.004 lb/MWh for N_2O, the adjusted intensity factor for CO_2 is 371.48 lbs/MWh.

- **Solid Waste Disposal.** Indirect emissions from waste generation are based on a total daily solid waste generation of 16,130 pounds per day (see Impact 5.19-4 for further details).

- **Water/Wastewater.** GHG emissions from this sector are associated with the embodied energy used to supply, treat, and distribute water and treat wastewater, and with fugitive GHG emissions from wastewater treatment. Emissions are based on average water demand and wastewater generation provided by Psomas (see Appendices Q and R).

- **Construction.** For purposes of this analysis, development of the proposed project is anticipated to begin in year 2023 and continue over three development phases in addition to the required remediation (see Table 5.3-10, *Construction Activities, Phasing, and Equipment*). Emissions of GHG would primarily be from operation of off-road construction equipment in addition to construction worker, vendor, and haul vehicles.

Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.[6] Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32 inventory but treats this short-lived climate pollutant separately.[7] Additionally, while not anticipated, industrial sources of emissions that require a permit from South Coast AQMD (permitted sources) are not included in

[6] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[7] Particulate matter emissions, which include black carbon, are analyzed in Section 5.3, *Air Quality*. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017a).

the proposed project community inventory since they have separate emission reduction requirements. GHG modeling is included in Appendix C of this DEIR.

5.8.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.8-1: Buildout of the proposed project would generate a substantial increase in GHG emissions compared to existing conditions and would have a significant impact on the environment. [Threshold GHG-1])

Implementation of a development project could contribute to global climate change through direct emissions of GHGs from onsite area sources and vehicle trips generated by the project, and indirectly through offsite energy production required for onsite activities, water use, and waste disposal. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis.

Emissions in the SoCAB

The proposed Specific Plan includes sustainable community design guidelines that focus on areas such as land use and transportation planning, energy efficiency, material efficiency, and water efficiency. The land use and transportation design guidelines include providing access to public and common use space within 0.25- to 0.50-mile walking distance from residential neighborhoods in the Specific Plan; including bicycle storage facilities in multifamily residential and community uses; and integrating bicycle paths/trails into the circulation network. Under the energy efficiency guidelines, a focal point is to utilize passive building design to minimize energy demand associated with heating and cooling. The water efficiency guidelines include using ultra low-flush toilets and low-flow fixtures, installing synthetic turf at the proposed Sports Park, and using drought-tolerant plants.

Annual GHG emissions were calculated for construction and operation of the proposed project and are shown in Table 5.8-6, *Project GHG Emissions Inventory*. The project operational phase emissions are from operation of the proposed land uses, off-road equipment used for daily operations, and project-related vehicle trips. Construction emissions were amortized into the operational phase in accordance with South Coast AQMD's proposed methodology (South Coast AQMD 2009).

Table 5.8-6 Project GHG Emissions Inventory

Source	GHG Emissions	
	$MTCO_2e$ per Year	Percentage
Area	285	2%
Energy[1]	2,285	18%
Mobile[2]	8,228	64%
Solid Waste	1,480	11%
Water	340	3%
Construction-Amortized[3]	275	2%
Total All Sectors	**12,894**	**100%**
Proposed South Coast AQMD Bright-Line Threshold	3,000 $MTCO_2e$	NA
Exceeds Threshold?	**Yes**	**NA**

Source: CalEEMod, Version 2020.4.0.
Notes: Manual summation of values may not equal the shown totals due to rounding.
[1] Utilizes an adjusted CO_2 intensity factor of 371.48 lbs/MWh based on the CO_2e intensity factor of 512 lbs/MWh reported by SCE for year 2020 and normalized to the RPS requirement for year 2027 of 52 percent (SCE 2020).
[2] Based on CalEEMod default calendar year 2035 vehicle emissions data.
[3] Construction emissions are amortized over a 30-year project lifetime per recommended South Coast AQMD methodology.

The Specific Plan has sustainable design guidelines that contribute to reducing GHG emissions, but because of its scale, the proposed project would generate annual GHG emissions of 12,894 $MTCO_2e$/yr and would exceed the bright-line threshold of 3,000 $MTCO_2e$/yr by 9,894 $MTCO_2e$/yr. The primary sources of project-related emissions would be from mobile-source emissions generated by the project-related vehicle trips, followed by energy sector emissions and solid waste sector emissions. Therefore, GHG emissions generated by the proposed project would cumulatively contribute to statewide GHG emissions, and impacts are potentially significant.

Emissions in the MDAB

For purposes of modeling, approximately 21.9 miles of the 75-mile soil haul route would be in the MDAB. Table 5.8-7, *Construction-Related GHG Emissions in the MDAB*, shows that GHG emissions from construction-related activities would be less than the MDAQMD daily and annual significance thresholds. Therefore, GHG impacts from project-related construction activities in the MDAB would be less than significant.

Table 5.8-7 Construction-Related GHG Emissions in the MDAB

Source	Lbs/Day[1]	Tons/Year
Year 2023 (Western Remediation Area)	11,554	81
Year 2024 (Eastern Remediation Area)	10,981	187
MDAQMD's Threshold	548,000	100,000
Exceeds Threshold?	No	No

Source: CalEEMod, version 2020.4.0.
[1] Emissions shown represent the proportion of the total emissions generated from impacted soil haul truck trips that would occur within the MDAB.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.8-2: Implementation of the proposed project would not conflict with plans adopted for the purpose of reducing GHG emissions. [Threshold GHG-2])

Impact Analysis: Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, SCAG's *Connect SoCal*, and the City's Sustainability Plan. A consistency analysis with these plans is presented below:

CARB Scoping Plan

The CARB Scoping Plan is applicable to state agencies, but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley California Advanced Clean Cars program).

Development projects accommodated under the proposed project are required to adhere to the programs and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32. These future individual development projects would comply with these statewide GHG emissions reduction measures. For example, new buildings under the proposed project would meet the current CALGreen and Building Energy Efficiency Standards. Project GHG emissions shown in Table 5.8-6 include reductions associated with statewide strategies that have been adopted since AB 32. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts are considered less than significant.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

Connect SoCal finds that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in *Connect SoCal* is to plan for the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020). *Connect SoCal*'s transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in *Connect SoCal*, would reduce per-capita GHG emissions related to vehicular travel and achieve the GHG reduction per capita targets for the SCAG region.

The proposed project would provide up to 1,100 additional housing units that would serve the local population. As discussed in Impact 5.14-1 of this DEIR, the city is currently jobs-rich, at 2.98 jobs per

housing unit. Implementation of the proposed project, which would provide additional housing, would decrease the jobs-housing ratio to 2.80. Because the recommended jobs-housing ratio is between 1.3 and 1.7, implementation of the proposed project would improve the jobs-housing balance for the City overall and could contribute to reducing the average distance traveled between where people live and work, therefore reducing passenger VMT. Additionally, as discussed under Impact 5.17-2, the project-generated VMT per service population would be lower than the City of Brea General Plan Buildout VMT per population threshold; overall, the proposed project would result in less than significant VMT impacts. Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies in the RTP/SCS, and impacts are considered less than significant.

City of Brea Sustainability Plan

The Sustainability Plan goals and measures focus on reducing GHG emissions through increasing building energy efficiency, increasing use of renewable energy, waste diversion, water conservation, and reducing VMT. The Sustainability Plan has 88 measures divided over three implementation phases to achieve the emissions reduction target under the plan. Implementation of the Sustainability Plan would achieve emissions reductions of 35,144 $MTCO_2e$, which would exceed the reduction target of 34,772 $MTCO_2e$ by year 2020.

As discussed in Impact 5.8-1, the proposed Specific Plan has sustainable community design guidelines that focus on land use and transportation planning, energy efficiency, material efficiency, and water conservation and efficiency. Consistent with the Sustainability Plan's focus on improving active transit, the proposed Specific Plan land use and transportation design guidelines include providing access to public and common use space within a 0.25- to 0.50-mile walking distance from residential neighborhoods in the project site. The proposed guidelines also include incorporation of bicycle storage facilities in multifamily residential and community uses and integrating bicycle paths/trails into the circulation network.

Furthermore, a focal point of the energy efficiency guidelines of the proposed Specific Plan is to use passive building design to minimize energy demand associated with heating and cooling. At a minimum, the residential units accommodated under the proposed project would be built to comply with the 2019 Building Energy Efficiency Standards and CALGreen standards. Compliance with these two standards would increase the energy efficiency of the proposed residential uses. Under the 2019 Building Energy Efficiency Standards, single-family homes and multifamily buildings of three stories or less would be required to install solar photovoltaic (PV) systems. Moreover, the water efficiency guidelines include using ultra low-flush toilets and low-flow fixtures, synthetic turf at the proposed sports park, state-of-the art irrigation controllers, self-closing nozzles on hoses, and drought-tolerant plants. Furthermore, starting on January 1, 2023, homes would be subject to the 2022 Building Energy Efficiency Standards, which would require single-family homes and multifamily buildings of three stories or less to be designed and built "electric ready"—that is, accommodate replacing natural gas-powered appliances (e.g., stove) and systems to their electric counterparts. Thus, overall, the proposed project would generally be consistent with the goals of the City's Sustainability Plan. Therefore, implementation of the proposed project would not be inconsistent or interfere with implementation of the City's Sustainability Plan, and impacts are considered less than significant.

Level of Significance Before Mitigation: Less than significant.

5.8.5 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin, but are dispersed worldwide. Therefore, impacts under Impact 5.8-1 are not project-specific impacts to global warming, but the proposed project's contribution to this cumulative impact.

5.8.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impact would be less than significant: 5.8-2.

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

- **Impact 5.8-1** Buildout of the proposed project would generate a substantial increase in GHG emissions compared to existing conditions and would have a significant impact on the environment.

5.8.7 Mitigation Measures

Impact 5.8-1

GHG-1 The project developer(s) shall design and build all residential homes to meet/include the following:

a) Tier 2 requirements for Division A4.1, Planning and Design, as outlined under Section A4.203.1.2.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code.

b) Tier 2 requirements for Division A4.2, Energy Efficiency, as outlined under Section A4.203.1.2.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code.

c) Tier 2 requirements for Division A4.3, Water Efficiency and Conservation, as outlined under Section A4.601.5.2 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code; comply with at least three elective measures selected from Division A4.3 of Appendix A4 Residential Voluntary Measures of the 2019 California Green Building Standards Code.

d) No wood-burning or gas-powered fireplaces shall be installed in any of the dwelling units.

e) Install a home battery storage unit (e.g., Tesla Powerwall) for all single-family units that are fitted with a solar photovoltaic generation system. At minimum, all installed battery storage units shall meet the requirements in Reference Joint Appendix 12 of the 2022 Building Energy Efficiency Standards.

f) Install a battery storage unit(s) (e.g., Tesla Powerwall) for all multifamily residential buildings that are fitted with a solar photovoltaic generation system. At minimum, all installed battery storage units shall meet the requirements in Reference Joint Appendix 12 of the 2022 Building Energy Efficiency Standards.

g) All buildings will be all electric, meaning that electricity is the only permanent source of energy for water heating; mechanical; heating, ventilation, and air conditioning (HVAC) (i.e., space-heating and space cooling); cooking; and clothes-drying, and there is no gas-meter connection. All major appliances (e.g., dishwashers, refrigerators, clothes washers and dryers, and water heaters) provided/installed shall be electric-powered EnergyStar-certified or of equivalent energy efficiency, where applicable.

Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall show provide documentation (e.g., building plans) to the City of Brea Building Division official or his/her designee, to verify implementation of the of the design requirements listed above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City of Brea shall verify implementation of the design requirements specified above.

GHG-2 The project developer shall design public-use parking lots that:

a) Provide electric vehicle (EV) charging stations. At minimum, the number of EV charging stations shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.3.2.

b) Provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces shall equal the Tier 2 Nonresidential Voluntary Measures of the California Green Building Standards Code, Section A5.106.5.1.2

Prior to the issuance of building permits for new development projects within the project site, the project developer(s) shall provide documentation (e.g., site plans) to the City of Brea Building Division official or his/her designee, to verify implementation of the of the design requirements specified above in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City of Brea shall verify implementation of the design requirements specified above.

5.8.8 Level of Significance After Mitigation

Impact 5.8-1

Implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing emissions. Table 5.8-8, *Project GHG Emissions Inventory with Mitigation*, shows emissions reductions associated with measures *d* and *g* of Mitigation Measure GHG-1. Because there are no specific project-level building designs for the proposed future residences, the potential emissions reductions associated with measures *a* through *c*

of Mitigation Measure GHG-1 are not quantified and cannot be accounted for in the mitigated inventory shown in the table. Additionally, potential emissions reductions associated with Mitigation Measure GHG-2 are not quantified and not accounted for in Table 5.8-8 because use of EV chargers and the preferred vehicle parking spaces would be voluntary, and their frequency of use would be speculative. Measures *e* and *f* are also not quantified.

Table 5.8-8 Project GHG Emissions Inventory with Mitigation

Source	GHG Emissions ($MTCO_2e$ Per Year)		
	Unmitigated Inventory	Mitigated Inventory	Net Change
Area	285	19	-266
Energy[1]	2,285	1,809[2]	-477
Mobile[3]	8,228	8,228	0
Solid Waste	1,480	1,480	0
Water	340	340	0
Construction-Amortized[3]	275	275	0
Total All Sectors	**12,894**	**12,152**	**-742**
Proposed South Coast AQMD Bright-Line Threshold	3,000 $MTCO_2e$	3,000 $MTCO_2e$	N/A
Exceeds Threshold?	**Yes**	**Yes**	**N/A**
Amount Exceeding the Bright-Line Threshold	9,979	7,904	N/A

Source: CalEEMod, Version 2020.4.0.
Notes: Manual summation of the values may not equal the shown totals due to rounding.
1 Utilizes an adjusted CO_2 intensity factor of 371.48 lbs/MWh based on the CO_2e intensity factor of 512 lbs/MWh reported by SCE for year 2020 and normalized to the RPS requirement for year 2027 of 52 percent (SCE 2020).
2 The change in energy consumption associated with an all-electric home compared to a mixed-fuel (i.e., natural gas and electricity) is based on applying an adjustment factor to the CalEEMod default energy rates using data from Table A-9 of the Sacramento Metropolitan Air Quality Management District Greenhouse Gas Thresholds for Sacramento County (SMAQMD 2020).
3 Based on CalEEMod default calendar year 2035 vehicle emissions data.
4 Construction emissions are amortized over a 30-year project lifetime per recommended South Coast AQMD methodology (South Coast AQMD 2009).

As shown in the table, implementation of measures *d* and *f* of Mitigation Measure GHG-1 would provide a net reduction in emissions of 742 $MTCO_2e$/yr and reduce overall project emissions to 12,152 $MTCO_2e$/yr. Implementation of the other measures under Mitigation Measure GHG-1 would also contribute to reducing GHG emissions. For example, installation of battery storage for the proposed homes would further enable homes to rely on more renewable electricity to meet their energy needs and rely less on grid electricity. An all-electric home paired with both a PV and battery storage system could reduce GHG emissions by 76 to 77 percent compared to standard mixed-fuel homes designed and built to the 2019 Building Energy Efficiency Standards (Frontier 2019).[8] However, even with the additional reductions associated with Mitigation Measure GHG-1 and Mitigation Measure GHG-2, it is anticipated that the proposed project would still exceed the bright-line threshold of 3,000 $MTCO_2e$/yr. Therefore, Impact GHG-1 would be significant and unavoidable.

8 Based on single-family and low-rise multifamily homes (one to three stories) built in Climate Zone 8 of California.

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5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

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5.9 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the proposed Specific Plan on human health and the environment due to exposure to hazardous materials or conditions associated with the construction and operation of the proposed development. Potential impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following sources:

- *Phase I Environmental Site Assessment Report,* Northgate Environmental Management, May 5, 2017 (Appendix H)
- *Focused Phase II Environmental Investigation*, Northgate Environmental Management, May 10, 2017 (Appendix I)

Complete copies of these studies are in the technical appendices of this Draft EIR.

5.9.1 Environmental Setting

5.9.1.1 AGENCIES THAT REGULATE HAZARDOUS MATERIALS

Hazardous materials are substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. They are used in products (e.g., household cleaners, industrial solvents, paint, pesticides, etc.) and manufacturing (e.g., of electronics, newspapers, plastic products, etc.). Examples of hazardous materials are petroleum, natural and synthetic gas, and other toxic chemicals that may be used in agriculture or commercial and industrial uses, businesses, hospitals, and households. Accidental releases of hazardous materials have a variety of causes, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

The term "hazardous materials," as used in this section, includes all materials defined in the California Health and Safety Code Sections 25411 and 25501:

> A material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the unified program agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Federal and state hazardous waste definitions are similar, but different enough that separate classifications are in place for federal Resource Conservation and Recovery Act (RCRA) hazardous wastes and State non-RCRA hazardous wastes.

Federal Agencies

Several federal agencies regulate hazardous materials:

- **US Environmental Protection Agency.** The EPA is the primary federal agency that regulates hazardous materials and waste. In general, the EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing trash. Under the authority of the RCRA and in cooperation with state and tribal partners, the EPA's Waste Management Division manages a hazardous waste program, an underground storage tank program, and a solid waste program, which includes development of waste reduction strategies such as recycling. The EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations.

- **Occupational Safety and Health Administration.** OSHA oversees administration of the Occupational Safety and Health Act, which requires specific training for hazardous materials handlers, provision of information to employees who may be exposed to hazardous materials, and acquisition of material safety data sheets from manufacturers. Material safety data sheets describe the risks associated with particular hazardous materials, and proper handling and procedures. Employee training must include response and remediation procedures for hazardous materials releases and exposures.

- **US Department of Transportation.** The USDOT has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The US Postal Service has developed additional regulations for the transport of hazardous materials by mail. USDOT regulations specify packaging requirements for different types of materials.

State Agencies

State agencies that regulate hazardous materials and waste in accordance with the federal and state laws include:

- **California Environmental Protection Agency:** CalEPA was created in 1991 by governor's executive order. Six boards, departments, and offices were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. CalEPA oversees hazardous materials and hazardous waste compliance throughout California. Among those responsible for hazardous materials and waste management are the Department of Toxic Substances Control (DTSC), Department of Pesticide Regulation, and Office of Environmental Health Hazard Assessment. CalEPA also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program), which consolidates and coordinates:

    - Hazardous Materials Release Response Plans and Inventories (Business Plans)
    - Underground Storage Tank Program
    - Aboveground Petroleum Storage Tank Act
    - Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs

- California Uniform Fire Code: Hazardous Material Management Plans and Inventory Statements
- California Accidental Release Prevention Program.

- California Department of Conservation, Geologic Energy Management Division. CalGEM prioritizes protecting public health, safety, and the environment in its oversight of the oil, natural gas, and geothermal industries, while working to help California achieve its climate change and clean energy goals. CalGEM uses science and sound engineering practices to regulate the drilling, operation, and permanent closure of energy resource wells.

- **California Department of Toxic Substances Control.** DTSC is the department of CalEPA that carries out the RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) programs in California to protect people from exposure to hazardous substances and wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations [CCR], Title 22, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

- **California State Emergency Response Commission.** The federal Emergency Planning and Community Right-to-Know Act (EPCRA) has specific directives for state governments for the implementation of EPCRA at the state level. The EPCRA program as it applies to California was promulgated in the state Health and Safety Code, Title 19, and in executive orders. The federal EPCRA program is implemented and administered in California by the California Governor's Office of Emergency Services, a State Emergency Response Commission, six local emergency planning committees (LEPC), and 83 certified Unified Program agencies (CUPA) (Cal OES 2019a).

- **California Department of Forestry and Fire Protection.** CAL FIRE is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Office of the State Fire Marshal provides for fire prevention by enforcing fire-related laws in State-owned or -operated buildings; investigating arson fires; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and state government emergency response agencies. The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.

Regional Agencies

Responsible regional agencies that regulate hazardous materials and waste in accordance with federal and state laws include:

- **Orange County Health Care Agency, Environmental Health Division.** The Environmental Health Division (OCHCA-EHD) was designated as the CUPA for the County of Orange, and the county and city fire agencies have joined in partnership with the CUPA as "participating agencies." OCHCA-EHD administers all CUPA programs for the City of Brea. The CUPA is the local administrative agency that coordinates the regulation of hazardous materials and hazardous wastes in Orange County through six programs:
  - Hazardous Materials Disclosure
  - Business Emergency Plan
  - Hazardous Waste
  - Underground Storage Tank
  - Aboveground Petroleum Storage Tank
  - California Accidental Release Prevention
- **Orange County Fire Authority.** The OCFA is the agency that provides fire protection and emergency medical services for unincorporated areas of Orange County as well as 23 cities in the county that contract OCFA's services. Although t Brea is not contracted with OCFA, the local hazard mitigation plan prepared by the County of Orange and OCFA covers the city.

Local Agencies

- **Brea Fire Services Department.** The primary mission of the Brea Fire Services Department is the delivery of life-safety services. The department provides 24-hour emergency response to a wide variety of critical situations, including fires and hazardous materials incidents. In addition, the department operates a very active Fire Prevention and Emergency Preparedness Program, with fire inspections, hazardous process permitting, fire code enforcement, public education, and business emergency planning in accordance with the California Code of Regulations (Brea 2019).

5.9.1.2 REGULATORY BACKGROUND

Hazardous wastes require special handling and disposal because of their potential to impact public health and the environment. Some materials are designated "acutely" or "extremely" hazardous under relevant statutes and regulations. Hazardous materials and wastes can pose significant actual or potential hazards to human health and the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Many federal, state, and local programs regulate the use, storage, and transportation of hazardous materials and hazardous waste. These programs are designed to reduce the danger that hazardous substances may pose to people and businesses under normal daily conditions and as a result of emergencies.

Federal Regulations

Resource Conservation and Recovery Act of 1976

The RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984, is the principal federal law that regulates the generation, management, and transportation of waste. The RCRA gave the EPA the authority to control hazardous waste from "cradle to grave," that is, from generation to transportation, treatment, storage, and disposal. The RCRA also created a framework for the management of nonhazardous wastes. The 1984 amendments to the RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. It should be noted that the RCRA focuses only on active and future facilities and does not address abandoned or historical sites.

CERCLA and SARA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly known as the "Superfund," established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986, which

- Stressed the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites.
- Required Superfund actions to consider the standards and requirements in other state and federal environmental laws and regulations.
- Provided new enforcement authorities and settlement tools.
- Increased State involvement in every phase of the Superfund program.
- Increased the focus on human health problems posed by hazardous waste sites.
- Encouraged greater citizen participation in site cleanup decisions.
- Increased the size of the trust fund to $8.5 billion.

CERCLA also enabled the revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priority List of Superfund sites.

Emergency Planning and Community Right-to-Know Act

EPCRA is also known as SARA Title III and was enacted by Congress as the national legislation on community safety. This law helps local communities protect public health, safety, and the environment from chemical hazards. The primary purpose of EPCRA is to inform communities and citizens of chemical hazards in their areas by requiring businesses to report the locations and quantities of chemicals stored

on-site to state and local agencies. These reports help communities prepare to respond to chemical spills and similar emergencies.

Section 3131 of EPCRA requires manufacturers to report releases to the environment (air, soil, and water) of more than 600 designated toxic chemicals, report off-site transfers of waste for treatment or disposal at separate facilities, develop pollution prevention measures and activities, and participate in chemical recycling. These annual reports are submitted to the EPA and State agencies. EPCRA Sections 301 through 312 are administered by the EPA's Office of Emergency Management. The EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program.

The EPA maintains and publishes a database that contains information on toxic chemical releases and other waste management activities by certain industry groups and federal facilities. This online, publicly available, national digital database is called the Toxics Release Inventory and was expanded by the Pollution Prevention Act of 1990.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires state and local governments to prepare mitigation plans that identify hazards, potential losses, mitigation needs, goals, and strategies. It is intended to facilitate cooperation between state and local governments.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 was enacted by Congress to give the EPA the ability to track the 75,000 industrial chemicals currently produced by or imported into the United States. The EPA repeatedly screens these chemicals and can require reporting or testing of any that might pose an environmental or human health hazard. It can ban the manufacture and import of chemicals that pose an unreasonable risk. Also, the EPA tracks the thousands of new chemicals that industry develops each year that have either unknown or dangerous characteristics. It can control these chemicals as necessary to protect human health and the environment. The act supplements other federal statutes, including the Clean Air Act and the Toxics Release Inventory under EPCRA.

Hazardous Materials Transportation Act

The USDOT regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations (CFR). State agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and the American Red Cross that: 1) provides the mechanism for coordinating delivery of federal assistance and

resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act and individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to need federal assistance or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

OSHA Regulation 29 CFR Standard 1926.62

The OSHA Regulation 29 CFR Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. It includes requirements for the safe removal and disposal of lead and the safe demolition of buildings containing lead-based paint or other lead materials.

State Regulations

California Health and Safety Code and CCR

California Health and Safety Code, Chapter 6.95, and 19 CCR Section 2729 describe 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 inventory disclosing hazardous materials stored, used, or handled on-site. A business that uses hazardous materials or mixtures containing them in certain quantities must establish and implement a business plan.

Tanner Act

Although numerous state policies deal with hazardous waste, the most comprehensive is the Tanner Act (Assembly Bill 2948), which was adopted in 1986. The Tanner Act governs the preparation of hazardous waste management plans and the siting of hazardous waste facilities in California. To be in compliance with the Tanner Act, local or regional hazardous waste management plans need to include provisions that define 1) the planning process for waste management, 2) the permit process for new and expanded facilities, and 3) the appeals process to the state available for certain local decisions.

California Building Code

The State provides a minimum standard for building design through the California Building Code (24 CCR Part 2). The CBC is based on the International Building Code and modified for California conditions. It is generally adopted jurisdiction by jurisdiction, with further modification based on local conditions. Commercial and residential buildings are plan-checked by city and county building officials for compliance with the CBC.

Asbestos-Containing Materials Regulations

State-level agencies, in conjunction with the EPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by:

- South Coast Air Quality Management District's Rule 1403
- California Health and Safety Code (Section 39650 et seq.)
- California Code of Regulations (Title 8, Section 1529)
- California Occupational Safety and Health Administration regulations (8 CCR Section 1529)
- 40 CFR Part 61 and Part 763, and 29 CFR Part 1926

Medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings and practices to reduce risks of asbestos emissions and exposure. Finally, federal, state, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Lead-Based Paint

OSHA's Lead in Construction Standard (8 CCR Section 1532) addresses permissible exposure limits; exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

State Hazardous Waste Management Programs

State programs that regulate hazardous materials and waste include:

Underground Storage Tank Program. Releases of petroleum and other products from USTs are the leading source of groundwater contamination in the United States. The RCRA Subtitle I establishes regulations governing the storage of petroleum products and hazardous substances in USTs and the prevention and cleanup of leaks. In EPA Region 9 (California, Arizona, Hawaii, Nevada, Pacific Islands, and over 140 tribal nations) the UST program operates primarily through state agency programs with EPA oversight. Under the umbrella of CalEPA, the State Water Resources Control Board (SWRCB) provides assistance to local agencies enforcing UST requirements. The purpose of the UST program is to protect public health and safety and the environment from releases of petroleum and other hazardous substances. The program consists of four elements: leak prevention, cleanup, enforcement, and tank tester licensing. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs, including groundwater analytical data, the surveyed locations of monitoring wells, and other data. The SWRCB's GeoTracker system currently has information submitted by responsible parties for over 10,000 leaking UST (LUST) sites statewide and was extended to include all SWRCB groundwater cleanup programs, including the LUST, non-LUST (Spill, Leaks, Investigation, and Cleanup), Department of Defense, and landfill programs.

The OCHCA-EHD is charged with conducting compliance inspections of regulated facilities in Orange County. Regulated facilities are those that handle hazardous materials, generate or treat hazardous waste, and/or operate a UST. All new installations of USTs require an inspection, as do removals of the old tanks under strict chain-of-custody protocol.

Hazardous Materials Disclosure Programs. Both the federal government (CFR, EPA, SARA, and Title III) and the state (Health and Safety Code, Division 20, Chapter 6.95, Sections 25500–25520; 19 CCR Chapter 2, Subchapter 3, Article 4, Sections 2729–2734) require all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials—termed a reporting quantity—to submit a hazardous materials emergency/contingency plan (also known as a hazardous materials business plan) to their local CUPA. The CUPA in Orange County is the OCHS-EHD, which is responsible for conducting compliance inspections of regulated facilities in Brea.

The hazardous materials business plan includes the business owner/operator identification page, hazardous materials inventory chemical description page, and an emergency response plan and training plan. Business plans must include an inventory of the hazardous materials at the facility. The entire hazardous materials business plan needs to be reviewed and recertified every three years. Business plans are required to include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. All facilities must keep a copy of their plan on-site.

Hazardous materials business plans are designed to be used by responding agencies, such as the Brea Fire Department, during a release or spill to allow for a quick and accurate evaluation of each situation for appropriate response. Businesses that handle hazardous materials are required by law to provide an immediate verbal report of any release or threatened release of hazardous materials if there is a reasonable belief that the release or threatened release poses a significant present or potential hazard to human health and safety, property, or the environment. If a release involves a hazardous substance listed in Title 40 of the CFR in an amount equal to or exceeding the reportable quantity for that material, a notice must be filed with Cal OES within 15 days of the incident.

Hazardous Materials Incident Response. Under Title III of SARA, the LEPC is responsible for developing an emergency plan for preparing for and responding to chemical emergencies in that community. The State Emergency Response Commission established six Emergency Planning Districts. It appointed a LEPC for each planning district and supervises and coordinates their activities.

The emergency plan developed by the LEPCs must include:

- An identification of local facilities and transportation routes where hazardous material 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 exercises to test the plan.

The LEPC membership must include (at a minimum):

- Elected state and local officials
- Police, fire, civil defense, and public health professionals
- Environment, transportation, and hospital officials
- Facility representatives
- Representatives from community groups and the media (Cal OES 2019b)

The City of Brea is in LEPC Region I comprising the counties of Los Angeles, Orange, San Luis Obispo, Santa Barbara, and Ventura.

Hazardous Material Spill/Release Notification Guidance. All significant spills, releases, or threatened releases of hazardous materials must be immediately reported. Federal and state emergency notification are required for all significant releases of hazardous materials. Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. The following state statutes require emergency notification of a hazardous chemical release:

- Health and Safety Code, Sections 25270.7, 25270.8, and 25507
- Vehicle Code, Section 23112.5
- Public Utilities Code, Section 7673 (PUC General Orders #22-B, 161)
- Government Code, Sections 51018, 8670.25.5(a)
- Water Code, Sections 13271, 13272
- California Labor Code, Section 6409.1(b)10

In addition, all releases that result in injuries or harmful exposure of workers must be immediately reported to Cal OSHA (California Labor Code, Section 6409.1 [b]). Additional reporting requirements are in the Safe Drinking Water and Toxic Enforcement Act of 1986, better known as Proposition 65, and Section 9030 of the California Labor Code.

California Accidental Release Prevention Program. CalARP became effective on January 1, 1997, in response to Senate Bill 1889. CalARP replaced the California Risk Management and Prevention Program. Under CalARP, Cal OES must adopt implementing regulations and seek delegation of the program from the EPA. 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. In most cases, local governments have

the lead role for working directly with businesses in this program. The OCHCA-EHD is the CUPA designated as the administering agency for CalARP.

Regional Regulations

Asbestos Emissions from Demolition/Renovation Activities

South Coast Air Quality Management District (SCAQMD) Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) provides requirements for limiting asbestos emissions from building demolition and renovation activities.

Local Hazard Mitigation Plan

Orange County's local hazard mitigation plan (LHMP) was approved by the Federal Emergency Management Agency in November 2015. The LHMP is a multi-jurisdiction plan developed jointly by the County of Orange, a local government, and the OCFA. The LHMP focuses on mitigating all natural hazards impacting unincorporated areas of the county as well as County- and OCFA-owned facilities. The City of Brea is a member of the Orange County Emergency Management Organization, which is a standing subcommittee of the Orange County Operational Executive Board tasked with developing and reviewing plans across the County to ensure consistency.

OCFA Combustible Soil Gas Hazard Mitigation: Guideline C-03

OCFA Guideline C-03 is intended as guidance for the scientific investigation, remediation, and/or mitigation of potentially hazardous concentrations of combustible soil gases associated with the construction and occupancy of a building or structure that is located within:

- Any location within an administrative boundary or a distance less than or equal to 100 feet beyond the administrative boundary of any oil/gas field that has been defined by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).
- A distance less than or equal to 100 feet from any active or abandoned oil/gas well that is not within the administrative boundary of an oil field as defined by the DOGGR.
- A distance of less than or equal to 300 feet from any gas seepage zone.

Local Regulations

City of Brea General Plan

The City of Brea General Plan, Chapter 6, Public Safety, includes goals and policies aimed at ensuring public safety and protecting the community from hazards associated with hazardous materials, wildland fires, flooding, and seismic activity and geologic conditions. Applicable policies include:

- **Policy PS-4.2.** Reduce the risks associated with ground transportation hazards.

- **Policy PS-4.3.** Work with responsible Federal, State, and County agencies to identify and regulate the disposal of toxic materials.

- **Policy PS-4.4.** Provide education and information to City residents regarding the proper use and disposal of household hazardous materials.

City of Brea Municipal Code

City of Brea Municipal Code Title 8, Health, Safety, and Welfare, provides for the preparation and carrying out of plans for the protection of people and property in the event of an emergency, as well as provides information on the storage, accumulation, collection, and disposal of refuse, trash, rubbish, solid waste, debris, other discarded materials, and recyclable materials. Title 8 includes the following chapters:

- **Chapter 8, Emergency Preparedness:** The purposes of this chapter are to provide for the preparation and carrying out of plans for the protection of persons and property within the city in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of the city with all other public agencies, corporations, organizations and affected private persons.

- **Chapter 8.24, Oil and Oil Wells:** Provides minimum health and safety standards for oil and gas exploration, drilling and production sites.

- **Chapter 8.28, Solid Waste Collection:** This chapter provides regulations designed to eliminate or alleviate issues associated with storage, accumulation, collection and disposal of refuse, trash, rubbish, solid waste, debris and other discarded material, as well as recyclable material. Solid waste is a matter of great public concern, in that improper control of such matters creates a public nuisance, which may lead to air pollution, fire hazards, illegal dumping, vector breeding and infestation and other problems affecting the health, welfare and safety of the residents of the city and adjacent communities.

- **Chapter 8.42, Pipeline Franchises:** Establishes rules, regulations, restrictions and terms and conditions associated with the granting of a franchise for pipelines used for the collection, transportation or distribution of oil, gas, gasoline, petroleum, wet gas, hydrocarbon substances, water, waste water, mud, steam, and other liquid and gaseous substances which are not more hazardous than the aforementioned substances.

City of Brea Emergency Preparedness Program

The City of Brea's Emergency Preparedness Program is coordinated by a professional emergency manager. The Emergency Preparedness Program consists of five elements:

- Development and maintenance of the City's Emergency Response Plan.

- Development and maintenance of the City's Emergency Operations Center.

- Coordination of preparedness, training, and exercises for City staff to be sure they are ready to respond to any emergency.
- Public education and outreach to the residents and businesses of Brea.
- Fund recovery following disasters.

5.9.1.3 EXISTING CONDITIONS

Historical and Current Use of the Project Site

An approximately 100-acre portion of the project site west of Valencia Avenue is currently developed with an active oil production field and nurseries. Greenland Nursery is located north of Lambert Road, and Future Foods Farms, an organic food growing company, is located south of Lambert Road and also utilizes a portion of the property for agricultural purposes. Oil field operations at this portion of the project site began in the 1920s, and agricultural uses were initiated in the 1930s. Figure 5.9-1, *Project Site Reconnaissance – West of Valencia Avenue*, illustrates current and historical features of approximately 100 acres of the project site west of Valencia Avenue.

The northern portion of the project site east of Valencia Avenue is an active oil production field (see Figure 5.9-2, *Project Site Reconnaissance – East of Valencia Avenue*). The southern portion of the project site east of Valencia Avenue, totaling approximately 43 acres, is occupied by a seasonal pine tree farm (Peltzer Pines Live Christmas Tree Farm). Although not observed during the Phase I site reconnaissance, the project site contains historical "sump" areas that were utilized for oil field drainage and waste storage prior to being filled in the 1960s. Historical sumps have been identified from historical aerial photographs as unlined areas historically utilized for the storage of waste oil and oil-field-related waste liquids. Oil field operations at the portion of the project site began in 1927, and agricultural uses, including orchards and tree farms, were in the 1950s.

A total of 104 oil wells and related dehydration unit, vapor recovery system, production unit and tank farm, and a carbon filtration area are currently operating at the project site. Operations at the oil fields included USTs and aboveground storage tanks (ASTs) for the storage and containment of gasoline, diesel, crude oil, and other processed hydrocarbons. Petroleum and steam pipelines are also present throughout the project site as both above- and below-ground features.

Phase I ESA Recognized Environmental Conditions

A recognized environmental concern (REC) refers to the presence or likely presence of any hazardous substances 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. The Phase I ESA identified these RECs in connection with the property:

- The project site has been an operating oil field since the 1920s. There are active oil wells, and various levels of ponded oil and staining were observed at each well, primarily in the vicinity of the well box. The

historical and current operations of the oil field, including the oil wells, tank farms, and pipelines, represent a potential threat to soil, groundwater, and/or soil vapor quality at the subject site.

- Multiple historical oil sumps, including a large, former, unlined oil sump located in the southwestern portion of the site east of Valencia Avenue, were present across the subject site. These historic sumps represent a potential threat to soil, groundwater, and/or soil vapor quality at the site.

- Petroleum and natural gas pipelines are present throughout portions of the project site. Petroleum hydrocarbons or other hazardous materials releases may have occurred along the pipelines.

Additionally, the Phase I identified the following potential environmental concerns:

- A drainage channel that traverses the project site west of Valencia Avenue from north to south potentially contains contaminated runoff from the Olinda Alpha Landfill.

- Given the historical use of the project site for agricultural purposes, there is a possibility of pesticides and herbicides in shallow soil in some areas of the project site.

- Test results from indoor air samples collected within the local zip code area indicate that radon may constitute a potential environmental concern at the project site.

- Injection wells are present at the project site and are subject to many new regulations. Further review of specific requirements for closing out the existing injection wells may be required prior to development of the project site.

A controlled recognized environmental condition refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. No controlled recognized environmental conditions were identified during the course of this assessment.

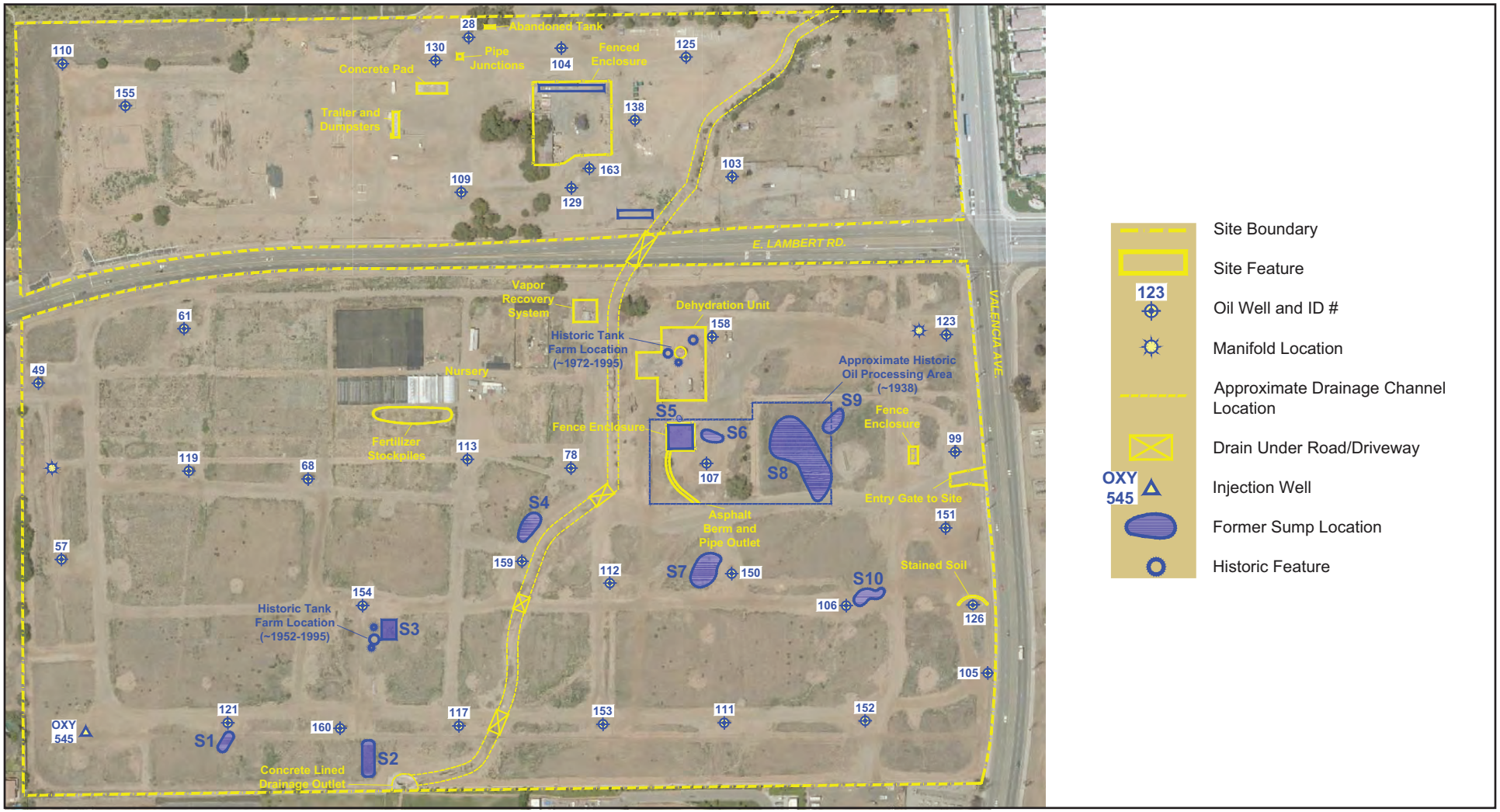
Historic REC (HREC) refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The Phase I ESA identified the following HREC at the project site:

- The project site west of Valencia Avenue has a documented release from a leaking diesel UST that impacted soil to depths of 90 feet below ground surface (bgs). The facility received regulatory closure from the OCHCA on August 20, 1991. However, no remedial action was performed, and petroleum hydrocarbons remain in soil at the project site.

Based on the RECs, HRECs and other potential environmental concerns identified in the Phase I ESA, a Phase II Environmental Site Assessment (Phase II ESA) was recommended and prepared. The Phase II ESA is included as Appendix I to the DEIR.

Figure 5.9-1 - Project Site Reconnaissance - West of Valencia Avenue

5. Environmental Analysis



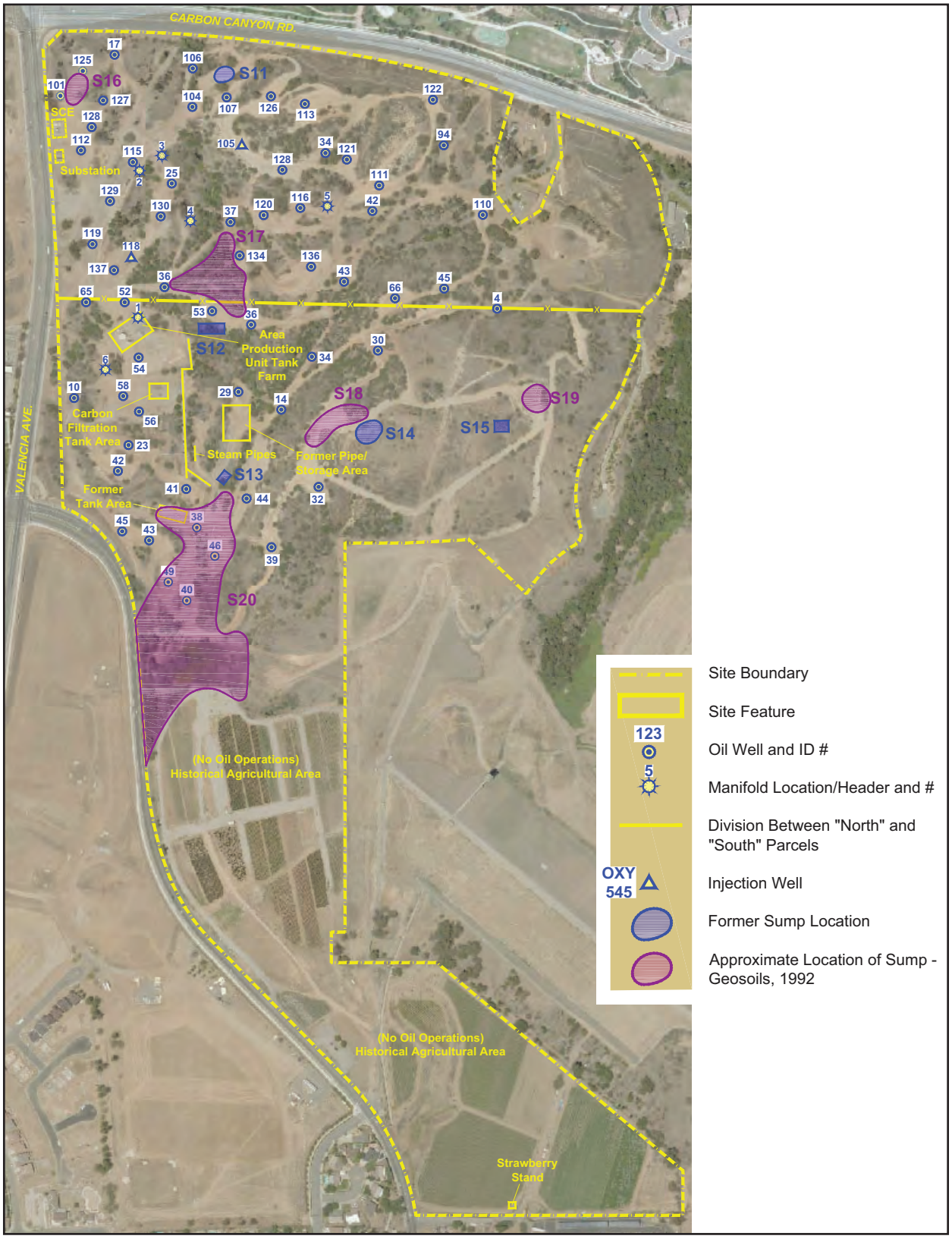
Source: Northgate, 2017

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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Figure 5.9-2 - Project Site Reconnaissance - East of Valencia Avenue

5. Environmental Analysis



Source: Northgate, 2017

5. Environmental Analysis
HAZARDS AND HAZARDOUS MATERIALS

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Phase II Environmental Site Assessment

The Phase II investigation focused on evaluating potential subsurface contamination impacts at specific features of potential environmental concern identified in the Phase I. The Phase II ESA scope of work included walking the site to mark the proposed boring locations, preparing a site-specific health and safety plan, collecting and analyzing soils samples collected from the project site, and conducting a soil vapor survey. Soil samples were collected by excavating 14 trenches, 4 shallow hand-auger borings, 2 deeper hollow-stem auger borings, and 2 direct-push GeoProbe borings. Figures 5 and 6 of the Phase II ESA (DEIR Appendix I) show soil sampling locations, including the oil-field vapor recovery system area, dehydration unit area, drainage channel, abandoned tank, the Brea-Olinda Tank Farm, piping header area, and historic sump locations. The collected samples were analyzed as follows; and abbreviations are defined below.

- 78 soil samples for TPH-cc (total petroleum hydrocarbons carbon chain)
  - 51 samples from east of Valencia Avenue and 27 samples from west of Valencia Avenue
- 21 soil samples for TPH-g (total petroleum hydrocarbons quantified as gasoline), VOCs (volatile organic compounds), SVOCs (semivolatile organic compounds)
- 17 soil samples for Title 22 metals (17 metals)
- 9 soil samples for uranium
- 14 soil samples for PCBs (polychlorinated biphenyl)
- 5 soil samples for OCPs (organochlorine pesticides), OPPs (organophosphorus pesticides), and chlorinated herbicides
- A soil vapor sample was analyzed for VOCs

Subsurface Conditions

Project Site West of Valencia Avenue

- A strong odor in the surface soils with an approximately 2-inch hydrocarbon layer at the trench from the eastern part of the vapor recovery system area.
- Occasional staining in approximately the upper 8 feet of soil at sump S3.
- A very light hydrocarbon staining in sump S5 in the upper 2 to 3 feet, followed by a heavier staining and stronger hydrocarbon odor to 10 feet bgs. Light staining to the total depth of 17 feet bgs.
- Heavy hydrocarbon staining and a strong odor in sump S8 between depths of approximately 8 to 43 feet bgs. A hydrocarbon odor to the total depth of 56 feet bgs, and staining observed between 50 and 56 feet bgs.

Project Site East of Valencia Avenue

- Surface soils within the upper one foot in the southeastern part of the Brea-Olinda Tank Farm have a darker color due to staining. However, no staining or odor was observed at deeper depths.
- Black staining in the southern portion of sump S20 between 4 and 7 feet bgs, and approximately 3 to 6 inches of staining in the northern part of sump S20.

Data Evaluation Criteria

The Phase II ESA evaluated soil sample testing results by using the regional screening levels (RSL) established by EPA Region 9 and the modified screening levels (SL) established by DTSC. Both screening levels are health-based exposure concentrations to chemicals of concern in both residential and commercial land use, but are not regulatory cleanup standards.

Soil samples analyzed for TPH were also evaluated using the Regional Water Quality Control Board's TPH maximum soil screening level, which is used to evaluate the potential threat to groundwater and to close investigations for petroleum- and VOC-impacted sites.

Soil vapor sample test results are compared to EPA RSLs and DTSC SLs for residential and commercial land use.

Soil Sampling Analytical Results

TPH: TPH was detected above laboratory reporting limits (RL) in 18 of the 51 samples analyzed from the project site east of Valencia Avenue and in 5 of the 27 samples analyzed from west of Valencia Avenue. The samples from vapor recovery system, dehydration units, abandoned tank, Brea Olinda Tank Farm, and manifold did not exceed the RLs or no TPH was detected. The areas of soil samples above RLs include historical sump locations.

VOCs and SVOCs: Several VOCs and SVOCs were detected above the laboratory RLs in samples collected on the project site west of Valencia Avenue. None of the reported concentrations of VOCs and SVOCs exceed their respective regulatory screening criteria. VOCs are from a wide range of sources—hydrocarbon products, aerosol sprays cans, cleaners and disinfectants, paints and glues, etc. VOCs and SVOCs were not reported above their laboratory RLs in any samples collected from the project site east of Valencia Avenue.

Metals and uranium: Low concentrations of several metals, including barium, chromium, cobalt, copper, nickel, vanadium, and zinc, were identified in all 16 of the samples analyzed. Low levels of uranium were also detected in 9 soil samples analyzed for uranium. However, none of the samples contained concentrations above their respective regulatory screening criteria for residential or commercial land use, or in the case of arsenic and vanadium, above naturally occurring background concentrations. The reported concentrations of all metals were within the range of generally accepted background levels.

PCBs: PCBs were not reported above their respective laboratory RLs in any of the 14 samples analyzed, except for a single detection of Aroclor-1260. Aroclor-1260 was detected in the drainage channel in the project site east of Valencia Avenue, but the concentration did not exceed any regulatory screening criteria.

OCP, OPP, and chlorinated herbicides: OCPs, OPPs, and chlorinated herbicides were not detected above their respective laboratory RLs in any of the four samples collected.

Soil Vapor: A number of VOCs were detected in the vapor sample, but none of the identified concentrations of VOCs exceed their respective residential or commercial soil vapor RSLs or calculated SLs.

Groundwater

The project site is located on the northern edge of the Coastal Plain of Orange County, a subunit of the Central Plain of the Orange County Groundwater Basin. The project site is located within the Forebay area of the Orange County Groundwater Basin, in the Yorba Linda subbasin. The Yorba Linda subbasin has very little groundwater pumping due to the high total dissolved solids concentrations and low transmissivity. Groundwater from the Yorba Linda subbasin flows southward into the main groundwater basin.

The topography of the project site is gently sloping with drainage flowing primarily to the south in various natural drainages that eventually run to storm drains, channels, or seasonal streams. Near the ground surface, groundwater generally exists in zones beneath the arroyo drainages or as discontinuous perched water zones in the sediments.

According to the Orange County Water District, groundwater is present in the principal aquifer zone at approximately 280 feet bgs in the project area. The principal aquifer zone is where most groundwater production occurs, and groundwater was not encountered in the borings advanced to a maximum depth of 60 feet bgs during site investigation. No groundwater contamination is present.

School

There is one school within a quarter mile of the project site. Olinda Elementary School, at 3145 East Birch Street, is approximately 500 feet south of the project site. Country Hills Elementary School and Heights Christian School are more than a mile to the east.

Airports

The project site is not in an Airport Environs Land Use Plan or within two miles of a public airport or public use airport.

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:

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.

H-5 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 result in a safety hazard or excessive noise for people residing or working in the project area.

H-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-7 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

5.9.3 Plans, Programs, and Policies

Regulatory Requirements

PPP HAZ-1 Any project-related hazardous materials and hazardous wastes will be transported to and/or from the project site in compliance with applicable state and federal requirements, including the US Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation standards; and the California Occupational Safety and Health Administration standards.

PPP 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 (Code of Federal Regulations, Title 40, Part 263), including the management of nonhazardous solid wastes and underground tanks storing petroleum and other hazardous substances.

PPP HAZ-3 Development within the Specific Plan will be designed and constructed in accordance with the regulations of the Orange County Health Care Agency, Environmental Health Department (OCHCA-EHD), which serves as the designated Certified Unified Program Agency (CUPA). The proposed project will be designed and constructed in accordance with the regulations of the OCHCA-EHD, which, as the designated CUPA, 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, (4) Aboveground Storage Tank Program, and (5) Underground Storage Tank Program.

PPP HAZ-4 Any project-related underground storage tank (UST) removals will be conducted in accordance with the California UST Regulations (California Code of Regulations, Title 23, Chapter 16). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions that will be completed with oversight from the Regional Water Quality Control Board, Department of Toxic Substances Control, Brea Fire Department, South Coast Air Quality Management District, and/or other regulatory agencies, as necessary.

PPP HAZ-5 Any project-related demolition activities that have the potential to expose construction workers and/or the public to asbestos-containing materials or lead-based paint are required to be conducted in accordance with applicable regulations, including, but not limited to:

- South Coast Air Quality Management District's Rule 1403
- California Health and Safety Code (Section 39650 et seq.)
- California Code of Regulations (Title 8, Section 1529)
- California Occupational Safety and Health Administration regulations (California Code of Regulations, Title 8, Section 1529 [Asbestos] and Section 1532.1 [Lead])
- Code of Federal Regulations, Title 40, Part 61 (asbestos); Title 40, Part 763 (asbestos); and Title 29, Part 1926 (asbestos and lead)

PPP HAZ-6 Any project-related new construction, excavations, and/or new utility lines within 10 feet of or crossing existing high-pressure pipelines, natural gas/petroleum pipelines, or electrical lines greater than 60,000 volts will comply with the California Code of Regulations, Title 8, Section 1541.

PPP HAZ-7 The proposed project will comply with the requirements of the City of Brea Municipal Code, Title 8, Health, Safety, and Welfare, and all applicable design and safety standards and regulations in the California Building Code.

5.9.4 Environmental Impacts

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.9.1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. [Threshold H-1]

The project site includes uses such as active and historical oil field uses, nurseries, and agricultural uses. Project construction would require removal and demolition of these uses prior to development of 1,100

residential units and associated amenities. The handling, use, transport, and disposal of hazardous materials during construction, including contaminated soil remediation, would be required to comply with existing regulations of several agencies—the EPA, OCHCA EHD, OSHA, California Division of Occupational Safety and Health, and USDOT. Construction activities would be temporary and would cease upon completion of construction phase. Furthermore, project construction workers would be trained on the proper use, storage, and disposal of hazardous materials. Therefore, a less than significant impact would occur during construction.

The proposed project involves residential development; therefore, project maintenance and operation would only use typical household chemicals such as cleaners, solvents, paints, and other custodial products and small amount of herbicides for gardening and landscaping. These materials would be used in relatively small quantities, clearly labeled, and stored in compliance with state and federal requirements. With the exercise of normal safety practices, the project would not create substantial hazards to the public or the environment. Therefore, a less than significant impact would occur during operation.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP HAZ-1 through PPP HAZ-7.

Impact 5.9.2: The proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. [Threshold HAZ-2]

On-Site Soil Impacts

The project site contains RECs and other environmental concerns at concentrations that exceed the applicable regulatory screening levels for residential and commercial land uses, as described in Section 5.9.1.3, *Existing Conditions*. The majority of environmental concerns listed were related to current and historical oil-field-related contaminants, such as hydrocarbons. Impacted areas are generally confined to the upper layers as a result of the large amount of clay in subsurface soils, except for certain historical production sumps where the impact extended to at least 56 feet bgs. In addition to the specific areas identified in the Focused Phase II ESA, the following describes potential environmental concerns that are associated with oil production activities within the project site in the areas that were not tested in the Focused Phase II ESA:

- **Oil releases from broken pipelines.** Buried and above-ground pipelines often exist in oil fields. These pipelines carry crude oil, water, and natural gas from the oil wells to storage tanks. A pipeline rupture would result in the release of crude oil that could impact the surrounding soils.

- **Oil releases from above-ground and underground storage tanks.** Oil-stained soils are often encountered adjacent to storage tanks. Releases may occur if a pipeline connected to a tank ruptures, if a tank is punctured or damaged, or during the transfer of crude between a storage tank and transport vehicles. Released oil could impact the surrounding soils.

- **Spilled refined fuels in the operation and maintenance of oil-field vehicles and generators.** Oil fields often have an equipment maintenance area where equipment and supplies are stored and where

generators and other pumping equipment are serviced. Refined fuel storage tanks are often in these areas to supply fuel for the vehicles used in servicing and maintaining the oil field. Spills of refined product could impact soil. Refined fuels pose a greater hazard to the environment than crude oil because the lighter hydrocarbon fractions in refined fuels are more soluble and volatile. Some of the constituents in gasoline and diesel fuel, including benzene, toluene, ethylbenzene, and isomers of xylene, are known to be harmful to human health.

- **Tank-bottom material used to oil roads.** Historically, road oiling was a common practice in oil fields to control dust. The oiling material was typically a residue consisting of water, oil, sediment, and sludge from storage tanks.

- **Formation water spilled onto the ground surface.** Formation water—often with high concentrations of total dissolved solids and approximating saline water in chemical composition—is often produced as part of the development of an oil field. If large quantities of this saline water are disposed of onto the ground surface and the water infiltrates the soil, the water quality of any near-surface aquifers can be impacted.

Table 5.9-1, *On-Site Impacted Soil Summary*, summarizes the impacted soils areas and soil volume that require excavation. As shown, 90,784 cubic yards (cy) of soils from the project site west of Valencia Avenue and 87,491 cy of soils from the project site east of Valencia Avenue—a combined total of 178,275 cy—are estimated to be impacted across the project site and require relocation, treatment, and/or off-site disposal. The estimated total includes additional soil to be removed to accommodate proper sloping for safe excavation activities but does not include the removal of clean overburden soil. Detailed volume calculations are included in Table 7 of the Focused Phase II ESA (Appendix I to the DEIR).

Table 5.9-1 On-Site Impacted Soil Summary

Location	Description	Impacts Soil Volume
Project Site West of Valencia		
Vapor Recovery System	Feature estimated to be 50% impacted to a depth of approximately 10 feet bgs.	512 cy
Dehydration Unit	Area estimated to be 35% impacted to a depth of approximately 10 feet bgs.	2,574 cy
Historic Sump S3	Sump estimated to be 30% impacted to a depth of approximately 10 feet bgs	111 cy
Historic Sump S5	Area estimated to be 100% impacted to a depth of approximately 17 feet bgs.	2,151 cy
Historic Sump S7	Sump estimated to be 30% impacted to a depth of approximately 10 feet bgs.	257 cy
Historic Sump S8	Area estimated to be 100% impacted to a depth of approximately 50 feet bgs. The sump is known to be impacted to at least 56 feet bgs, the deepest depth explored. Remediation of this sump is planned to include excavation to 50 feet bgs followed by the placement of a liner and the treatment of deeper impacts *in situ*.	27,440 cy
Drainage Channel	Feature estimated to be between 75% and 80% impacted to a depth of approximately 2.5 feet bgs.	11,247 cy
Oil Wells/Roads./Former Agricultural Use/Additional Historic Sumps	Excavation volumes were also estimated for additional project site features identified to be of potential environmental concern that were not directly investigated in the Focused Phase II ESA.	46,492 cy
	Subtotal	**90,784 cy**
Project Site East of Valencia		
Brea-Olinda Tank Farm	Area estimated to be 25% impacted to a depth of approximately 5 feet bgs.	763 cy
Manifolds and Pipelines	Feature estimated to be 10% impacted to a depth of approximately 10 feet bgs and includes 6 manifolds and pipeline areas.	830 cy
Historic Sump S20	Sump estimated to be 50% impacted to a depth of approximately 7 feet bgs.	16,597 cy
Oil Wells/Roads/Former Agricultural Use/Additional Historic Sumps	Excavation volumes were also estimated for additional site features identified to be of potential environmental concern that were not directly investigated in the Focused Phase II ESA.	69,301 cy
	Subtotal	**87,491 cy**
	Total	**178,275 cy**

Source: Northgate 2017b.

As shown in Table 5.9-1, the proposed project would require relocation, treatment, and/or off-site disposal of approximately 178,275 cy of impacted soils from the project site. The total volume is an estimate only, and further investigation is necessary to further define and evaluate the vertical and lateral extent of impacted soils, not only in the historic sumps and drainage channels that were already included in the Focused Phase II ESA, but in other areas of the project site that were identified in the Phase I ESA and the Focused Phase II ESA as potential environmental concerns.

Methane Impact

The proposed project allows for residential development on a remediated oil field that has a potential for hazardous fire conditions due to methane release. Methane occurs as natural gas in oil and gas fields as a byproduct of petroleum production. Methane is lighter than air, colorless, odorless, noncarcinogenic, and flammable. When methane is mixed with other gases like carbon dioxide or hydrocarbons, the methane gas mixtures typically have densities comparable to or less than air. The primary mechanisms for methane migration in the subsurface are pressure driven flow and diffusion. Methane will migrate from areas where it

is present at higher pressures or concentrations to areas where it is present at lower pressures or concentrations. Since methane is lighter than air, it has a tendency to rise from depth to the ground surface where it dissipates into the atmosphere. Where a relatively impermeable barrier, e.g., a concrete slab, is present at the ground surface, the potential exists for methane to accumulate beneath that barrier. Methane is an asphyxiant and is combustible and potentially explosive when it is present at concentrations in excess of 53,000 parts per million by volume in the presence of oxygen. According to DTSC, with concentrations in excess of 5,000 parts per million by volume, it is often conservatively presumed that methane may infiltrate through flooring material or cracks, accumulate under footings and in enclosed spaces (e.g., small rooms, vaults, wall spaces), and cause a fire or explosion when an ignition source is present (e.g., pilot flame, electrical spark, cigarette) (DTSC 2005). Therefore, there is a potential for methane to be a significant impact.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.9-3: The proposed project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school. [Threshold H-3]

The Olinda Elementary School is 500 feet south of the project site. The project site is an active oil field, and there are a number of RECs and HRECs that require remediation. The proposed project is required to comply with PPP HAZ-1 through PPP HAZ-7. However, even with the required regulatory requirements, the proposed project could result in hazardous emissions and handling of hazardous or acutely hazardous materials, substance, or wastes that could adversely affect Olinda Elementary School.

During operation, the proposed project would not involve any uses that emit hazardous emissions or handle hazardous materials.

Level of Significance Before Mitigation: Potentially significant impact**.**

Impact 5.9-4: The project site is on a site that is 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. [Threshold HAZ-4]

The project site is listed on a number of regulatory databases:

- The UST database indicates that three USTs were formerly present at the portion of the site west of Valencia Avenue, including a 555-gallon gasoline UST, a 555-gallon diesel UST, and a 1,000-gallon gasoline UST.

- The LUST database indicates that soil was impacted by a release of diesel fuel, additives, and gasoline from one or more of the USTs at the project site. The facility received regulatory closure from the OCHCA in August of 1991, although no impacted soil was removed, and no remediation occurred in connection with the release(s).

- The Underground Injection Control database indicates the presence of both active and plugged underground injection wells associated with oil field wastewater disposal and other oil field operations.

- The project site is listed on the Hazardous Waste Information System database related to the storage, bulking, and transfer off-site of approximately seven tons of unlisted product in 2012 from a Southern California Edison electrical transformer area.

- The project site is listed on the GeoTracker website for releases from gasoline and diesel USTs impacting soil at the site. The listing identifies Shell Western Oil Products as the responsible party for the release referenced at 2701 Valencia Avenue. The release was reported in 1988 and received regulatory closure from the Orange County Local Oversight Program and the Regional Water Quality Control Board on August 20, 1991.

- The National Pipeline Mapping System online mapping system identified three active pipelines abutting or traversing the project site. Two pipelines are owned and operated by Exxon-Mobil and listed to contain gasoline. The third pipeline is owned and operated by Southern California Edison and is listed to contain natural gas. No accidents or incidents are identified for the pipelines at the project site or in the vicinity. The presence of these pipelines represents a potential environmental threat to the soil, groundwater, and/or soil vapor quality at the project site.

The removal of any ASTs or USTs on-site shall be conducted in accordance with the regulations of OCHCA-EHD, which serves as the designated CUPA. The OCHCA-EHD implements state and federal regulations for the Aboveground Storage Tank Program and Underground Storage Tank Program. Furthermore, any UST removals will be conducted in accordance with the California UST Regulations (23 CCR Chapter 16).

Any project-related new construction, excavations, and/or new utility lines within 10 feet or crossing existing high-pressure pipelines, natural gas/petroleum pipelines, or electrical lines greater than 60,000 volts will be conducted in accordance with 8 CCR Section 1541.

The project site is listed in a number of hazardous materials sites, and therefore could create a significant hazard to the public or the environment if not the materials are properly removed or sites remediated.

Off-Site

The properties to the north of the project site have historically been developed as oil fields, including the Olinda Alpha Landfill. The area south of the project site is developed with an electric substation owned and operated by Southern California Edison. The remaining areas of the project site vicinity have historically been used as agricultural land prior to development for residential uses during the 1980s and 1990s. No hazardous materials releases have been documented in the immediate vicinity of the project site that represent a potential threat to soil, groundwater, or soil vapor quality at the project site.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.9-5: The project site is not 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. [Threshold H-5]

The project site is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest airport is Fullerton Municipal Airport approximately 7.65 miles southwest of the project site. Implementation of the proposed project would not result in a significant impact related to any public airport.

Level of Significance Before Mitigation: No impact.

Impact 5.9-6: Project development would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. [Threshold H-6]

The Brea Fire Department provides emergency response for hazardous material incidents and administers the Fire Prevention and Emergency Preparedness Programs. The Emergency Preparedness Program consists of the development and maintenance of the City's Emergency Response Plan and the City's Emergency Operations Center. The program addresses appropriate responses to major earthquakes, hazardous materials accidents, wildfire, and dam failure. The program describes how emergency response will be coordinated and how evacuation of residents will proceed. Program objectives include injury reduction and avoiding loss of life and property damage through effective management of emergency forces.

The cities of Anaheim and Huntington Beach have entered into a joint powers agreement to form the Orange County-City Hazardous Materials Emergency Response Authority (OCCHMERA). Anaheim and Huntington Beach provide two hazardous materials response teams, which in turn, provide hazmat emergency service for the cities of Brea, Costa Mesa, Fountain Valley, Fullerton, Garden Grove, Newport Beach, and Orange. Furthermore, the OCCHMERA team consists of highly trained hazardous materials specialists supported by certified operational first responders and responds to incidents involving a release or potential threat of hazardous materials and wastes that poses a risk to citizens. This includes spills, leaks, abandonment, and/or industrial process accidents as well as physical, chemical, biological, or radiological hazards in the community (Anaheim 2019).

During the construction and operation phases of the proposed Specific Plan, development would not interfere with any of the daily operations of the Brea Fire Department or the OCCHMERA team, which support emergency planning and response efforts in Brea. All construction activities would be performed according to the City's and Brea Fire Department's standards and regulations. The proposed development would be required to provide the necessary on- and off-site access and circulation for emergency vehicles and services during the construction and operation phases.

The proposed development would also be required to go through the City's development review and permitting process and incorporate all applicable design and safety standards and regulations in the CBC and the City's municipal code to ensure that project development does not interfere with the provision of local emergency services (provision of adequate access roads to accommodate emergency response vehicles, adequate numbers/locations of fire hydrants, etc.).

Based on the preceding, implementation of the proposed Specific Plan (both the construction and operational phases) would not impair implementation of or physically interfere with emergency response or evacuation plans. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP HAZ-7.

Impact 5.9-7: The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. [Threshold H-7]

A portion of the project site is in a State Responsibility Area and is adjacent to land classified as a very high fire hazard severity zone. Impacts associated with wildland fires are discussed in detail in Chapter 5.20, *Wildfire*. With the implementation of regulatory requirements (PPP WI-1 and PPP WI-2), the proposed development would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, and the impact would be less than significant.

Level of Significance Before Mitigation: Less than significant impact with the implementation of PPP WI-1 and PPP WI-2.

5.9.5 Cumulative Impacts

Oil field remediation involves site-specific activities and would not add to or combine with similar site-specific impacts that may occur during future development in Los Angeles and Orange counties and adjacent cities. No dangerous activities or significant use of hazardous substances presently occur or are anticipated in the existing or future residential areas. No adverse cumulative impacts related to hazardous substances or the creation of any health hazards are anticipated as a result of this project.

Full buildout of the Specific Plan would add 1,100 new households to the immediate area. Development of a large-scale residential community will substantially reduce the present level of wildland fire hazard in northern Orange County and southeastern Los Angeles County. This would result from conversion of large areas of presently natural, flammable landscape into an urbanized landscape that includes noncombustible vegetation, on-site irrigation, a pressurized water system and fire hydrants, and improved site access. As a result, implementation of the Specific Plan and other cumulative development in the area are expected to significantly reduce the fire hazard potential. The proposed project would not result in a cumulatively considerable wildfire impact.

5.9.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, some impacts would be less than significant: 5.9-1, 5.9-5, 5.9-6, and 5.9-7 .

Without mitigation, the following impacts would be **potentially significant**

- **Impact 5.9-2:** The project site contains hazardous materials impacted soils that require further investigation, which could create a significant hazard to the public or the environment without mitigation.
- **Impact 5.9-3:** The project site is an active oil field, and the proposed project could result in hazardous emissions and handle hazardous wastes that could adversely impact Olinda Elementary School.
- **Impact 5.9-4:** The project site is located on number of hazardous materials sites that could potentially create a significant hazard to the public or the environment.

5.9.7 Mitigation Measures

Impacts 5.9-2, 5.9-3, and 5.9-4

HAZ-1 An additional Phase II Environmental Site Assessment (ESA) shall be performed at the historical sumps and the drainage channel already investigated under the Focused Phase II ESA to better define and evaluate the vertical and lateral extent of impacted soils. In addition, a Phase II ESA shall be prepared to investigate other historical sumps, oil wells, former tank areas, roads, manifolds and pipelines, and the agricultural land that were not included in the Focused Phase II ESA. Phase II ESAs shall include strategic test pits and trenching, near-surface and shallow soil testing, and drilling of deep soil borings at the areas of potential environmental concern identified in the Phase I ESA and the Focused Phase II ESA (DEIR Appendix H and Appendix I).

The additional Phase II ESA investigations shall be conducted in accordance with guidelines developed by the Department of Toxic Substances Control (DTSC) and US Environmental Protection Agency (EPA) for site assessments. The Phase II ESA investigation shall be submitted to the City of Brea Community Development Department for review and approval by an independent third-party reviewer.

HAZ-2 All cleaning, dismantling, and removal of oil field production tanks shall be conducted in compliance with permitting, sampling, monitoring, and handling requirements of the applicable regulatory oversight agency or agencies. A Phase II Environmental Site Assessment shall be conducted upon completion of tank and facility removal operations.

HAZ-3 If the Phase II Environmental Site Assessment (ESA) testing described in Mitigation Measure HAZ-1 reveals concentrations of contaminants (TPH, VOCs, SVOCs, PCBs, OCPs, OPPs, soil vapor, etc.) above acceptable health-based screening levels for residential exposure, those areas shall be defined and remediated to below the health-based level of concern, and the project applicant shall prepare a remedial action plan (RAP). The RAP shall be reviewed and approved by the appropriate oversight regulatory agencies (Orange County Health Care Agency–Environmental Health Division, Orange County Fire Authority, Regional Water Quality Control Board, etc.) prior to issuance of a grading permit for an

affected area. Remediation may include bioremediation, excavation, and disposal of impacted soil. The construction contractor shall implement the recommendations outlined in the RAP.

HAZ-4 Verification soil sampling (confirmation sampling) shall be conducted after remediation of impacted soils that exceeded the approved remedial action plan (RAP) criteria. Verification sampling shall be conducted under the direction of the regulatory oversight agency representative and shall be collected and analyzed in compliance with the approved RAP or as directed by the regulatory oversight agency.

HAZ-5 The project applicant shall retain an experienced petroleum environmental consultant to document the remediation efforts during all remediation phases, overall site grading, and implementation of the project mitigation measures in accordance with the approved remedial action plan. At completion of the site remediation, site closure reports containing environmental documentation shall be submitted to the appropriate oversight regulatory agencies for approval. A closure letter from the Orange County Health Care Agency shall be obtained to document the completion of remediation activities prior to the issuance of building permits.

HAZ-6 Prior to commencing grading operations, the project applicant shall consult with the California Department of Conservation, Geologic Energy Management Division (CalGEM), to ensure that all oil wells on the project site have been identified and are plugged and abandoned in accordance with applicable CalGEM regulations. Any oil well that has not previously been abandoned, as evidenced by the issuance of a "Report of Well Abandonment" issued by CalGEM, shall be plugged and abandoned in accordance with CalGEM regulations and shall meet all CalGEM requirements. Abandonments shall be completed prior to the commencement of grading within 50 feet of such a well.

Any previously abandoned well that is within 100 feet of a proposed structure or within a street right-of-way shall be evaluated and reabandoned, if necessary, to meet updated CalGEM standards prior to building permit approval.

HAZ-7 No habitable buildings shall be built closer than 10 feet to an abandoned wellbore.

HAZ-8 In the event that any crude oil pipelines remain in operation on the project site, they shall be relocated at least 100 feet from any building and buried beneath the ground surface or in compliance with county, state, or federal setback requirements, whichever is greater.

HAZ-9 Existing 30-inch SoCal Gas gas line shall be located within a minimum of 10 feet easement and shall not be located within any private residential lot.

HAZ-10 Prior to issuance of building permits, soils adjacent to oil wells abandoned in development areas shall be mitigated to meet residential cleanup requirements of an approved remedial action plan.

HAZ-11 Prior to issuance of any building permits, any abandoned well within 300 feet of a planned habitable structure shall be mitigated to the current guidelines of the City of Brea Fire Department. All habitable structures within 300 feet of an abandoned well shall follow methane mitigation methods approved by the City's Combustible Soil-Gas Guideline. Any mitigation measure required of habitable structures shall be reflected on any plans submitted for building permits or occupancy permits.

HAZ-12 Prior to issuance of any building permit for any Planning Area following remediation and decommission efforts on the areas of the existing oil and gas production operations, the project applicant shall prepare a combustible gas/methane assessment study by a registered professional and submit it to the City of Brea Fire Department for review and approval. The study shall meet the requirements of the City's Combustible Soil-Gas Guideline and contain a detailed description of the site investigation, including the methodology and data collection techniques used. If detectable levels of methane are encountered on the project site that exceed the Brea Fire Department standards, the project applicant shall submit a mitigation plan to the City of Brea Fire Department and implement remedial measures as directed by the City's Fire Department.

5.9.8 Level of Significance After Mitigation

Impacts 5.9-2, 5.9-3, and 5.9-4

Implementation of Mitigation Measures HAZ-1 through HAZ-4 would further define the vertical and lateral extent of impacted soils from the project site by performing soil borings at the areas of potential environmental concerns for subsequent remedial cleanup in accordance with applicable regulations from DTSC and US EPA. Preparation and implementation of remedial action plan to relocate, treat, and/or dispose of impacted soils to ensure that the project site is cleaned up to meet the applicable screening levels for residential uses. In addition, implementation of Mitigation MeasureHAZ-5 would ensure that remediation efforts during all remediation phases, overall site grading, and implementation of the project mitigation measures are performed in accordance with the approved remedial action plan by an experienced petroleum environmental consultant. Mitigation Measures HAZ-6 through HAZ-11 would ensure that the applicable remediation activities are reviewed and approved by the OCHCA, OCFA, and CalGEM at the close of the remediation activities and prior to issuance of any building permit on the areas of the existing oil and gas production. Preparation and implementation of a combustible gas/methane assessment study as required in Mitigation Measure HAZ-12 would ensure that impacts are reduced to a less than significant level. Therefore, potential impacts associated with hazardous materials would be reduced to a less than significant level, and no significant and unavoidable adverse impacts would remain.

5.9.9 References

Anaheim Fire and Rescue. 2019, August 19 (accessed). Hazardous Materials Response Team. https://www.anaheim.net/697/Hazardous-Materials-Response-Team.

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HAZARDS AND HAZARDOUS MATERIALS

Department of Toxic Substances (DTSC). 2005, June 16. Advisory on Methane Assessment and Common Remedies at School Sites. http://www.hawaiidoh.org/references/CalEPA%202005b.pdf.

Governor's Office of Emergency Services (Cal OES). 2019a. State Emergency Response Commission. https://www.caloes.ca.gov/FireRescueSite/Pages/State-Emergency-Response-Commission.aspx.

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Northgate Environmental Management. 2017a, May 5. Phase I Environmental Site Assessment Report. DEIR Appendix H.

———. 2017b, May 10. Focused Phase II Environmental Investigation. DEIR Appendix I.

5.10 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the proposed project to hydrology and water quality conditions in the City of Brea and its sphere of influence (SOI). 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.

- *Preliminary/Conceptual Draft Water Quality Management Plan, Brea 265*, Hunsaker & Associates Irvine, Inc., February 11, 2022 (Appendix J)
- *Preliminary Hydrology Analysis for Brea 265*, Hunsaker & Associates Irvine, Inc, February 11, 2022 (Appendix K)

Complete copies of these studies are in the Appendix J and Appendix K of this Draft EIR.

5.10.1 Environmental Setting

5.10.1.1 REGULATORY BACKGROUND

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.

Safe Drinking Water Act

The federal Safe Drinking Water Act regulates drinking water quality nationwide and gives the EPA the authority to set drinking water standards, such as the National Primary Drinking Water Regulations. These regulations protect drinking water by limiting the levels of contaminants that can adversely affect public health. All public water systems that provide service to 25 or more individuals must meet these standards. Water purveyors must monitor for contaminants on fixed schedules and report to the EPA when a maximum

contaminant level (MCL) is exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Contaminants include organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer, radionuclides (e.g., uranium and radon), and microbial contaminants (e.g., coliform and E. coli). The MCL list typically changes every three years as the EPA adds new contaminants or revises MCLs. The California Department of Public Health's Division of Drinking Water and Environmental Management is responsible for implementation of the Safe Drinking Water Act in California.

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 National Pollutant Discharge Elimination System 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 (RWQCB), 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 Brea is in the Santa Ana River Basin, Region 8. The Basin Plan gives direction on the beneficial uses of the state waters within Region 8; 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.

National Pollutant Discharge Elimination System

The NPDES permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the US from their municipal separate storm sewer systems (MS4s). Under the NPDES program, all facilities that discharge pollutants into waters of the US are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program, and the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA 2012).

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, 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.) Under the national program, NPDES permits are issued only for direct, point-source discharges. Direct sources discharge directly to receiving waters, and indirect sources discharge to publicly owned treatment works, which in turn discharge to receiving waters.

NPDES issues two basic permit types: individual and general. 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 and construction sites that are one acre or more 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 II Final Rule. The Phase II Final Rule requires an operator (such as a city) of a regulated small MS4 to develop, implement, and enforce a program (e.g., best management practices, 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. City of Brea Public Works Department is the local enforcing agency of the MS4 NPDES permit.

Municipal Stormwater (MS4) Permit

The project area lies within the jurisdiction of the Santa Ana RWQCB (Region 8) and is subject to the waste discharge requirements of the North Orange County MS4 Permit (Order No. R8-2009-0030) and NPDES Permit No. CAS618030, as amended by Order No. R8-2010-0062. The County of Orange, incorporated cities of Orange County, and the Orange County Flood Control District are co-permittees under the MS4 Permit. Pursuant to this permit, the co-permittees were required to develop and implement a drainage area management plan (DAMP) as well as local implementation plans, which describe urban runoff management programs for the local jurisdictions. The City of Brea, as a permittee under the General MS4 permit, has legal authority for enforcing the terms of the permit in its jurisdiction.

The General MS4 Permit requires that new development or significant redevelopment projects use best management practices (BMP), including site design planning, source control, and treatment techniques, to ensure that the water quality of receiving waters is protected. These requirements are detailed in the Orange County Model Water Quality Management Plan (WQMP) and supplemental Technical Guidance Document, updated December 2013, which the City of Brea has incorporated into its project approval processes. In the project area, any new development project or significant redevelopment project (i.e., adding 5,000 or more square feet of impervious surface) is required to prepare a WQMP that specifies the BMPs and low-impact development (LID) measures that would be implemented to minimize the effects of the project on regional hydrology, runoff flow rates and/or velocities, and pollutant loads. LID is a stormwater management strategy that emphasizes conservation and use of existing site features integrated with stormwater controls designed to mimic natural hydrologic patterns, and that minimizes runoff by reducing the elements of development that produce it. An operations and maintenance plan must be included as part of the WQMP and designate terms, conditions, and requirements for maintaining the BMPs in perpetuity.

County of Orange

The County of Orange regulates storm runoff and water quality as the principal permittee under the General MS4 Permit and the DAMP. The City of Brea is a co-permittee under the General MS4 Permit and has legal authority for enforcing the terms of the permit in its jurisdiction.

The DAMP includes a New Development and Significant Redevelopment program. This program incorporates watershed protection and stormwater quality management principles into the general-plan process, environmental review process, and development permit approval process. The New Development and Significant Redevelopment program includes a model WQMP that defines requirements for project-specific planning, selection, and incorporation of BMPs into new development or redevelopment projects.

Stormwater Program: Trash Implementation Program

On April 7, 2015, the SWRCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and to Part 1, Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. They are collectively referred to as the "Trash Amendments." The Trash Amendments do the following: (1) establish a narrative water quality objective for trash, (2) corresponding applicability, (3) establish a prohibition on the discharge of trash, (4) provide implementation requirements for permitted stormwater and other discharges, (5) set a time schedule for compliance, and (6) provide a framework for monitoring and reporting requirements. Following adoption, the Trash Amendments were submitted to the California Office of Administrative Law and the EPA for review and approval. The Office of Administrative Law approved the Trash Amendments on December 2, 2015. The EPA approved the Trash Amendments on January 12, 2016.

The Trash Amendments apply to all Phase I and II permittees under the NPDES MS4 permits who retain regulatory authority over priority land uses. The SWRCB's executive director sent separate 13383 orders to traditional and nontraditional small MS4 permittees on June 1, 2017. RWQCBs, as the permitting authority, issued to their Phase I permittees either Water Code 13383 or 13267 orders that contain region-specific requirements, which may differ from the SWRCB's orders.

The Trash Amendments apply to all surface waters of the state and prohibit the discharge of trash to surface waters of the state or depositing trash where it could be discharged into surface waters of the state. Priority land uses are developed sites that include high density residential (10 or more dwelling units/acre); industrial; commercial; mixed urban; public transportation stations and stops; alternative areas determined by the permittees; and other areas determined by the state.

The Brea 265 Specific Plan has a maximum gross density of 4.2 dwelling units per acre, and therefore is not considered a priority land use.

City of Brea

All applicants for a priority project under the City of Brea Local Implementation Plan and Water Quality Ordinance (Municipal Code Section 13.32.030) are required to prepare a WQMP to minimize the adverse effects of urbanization on site hydrology, runoff flow rates, and pollutant loads. The proposed project is in the preliminary planning phase of development, and a preliminary/conceptual draft WQMP was prepared for the proposed project (Appendix J).

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2001 the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). The current Statewide Construction General Permit is SWRCB Order No. 2009-0009-DWQ, issued in 2009. Under this statewide 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 be covered by the general permit. Coverage by the general permit is accomplished by completing and filing permit registration documents with the SWRCB,

which include a notice of intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement. The permit registration documents are submitted electronically to the SWRCB via the Storm Water Multiple Application and Report Tracking System website. Each applicant under the Construction General Permit must ensure that the SWPPP is prepared prior to grading and is implemented during construction. The SWPPP 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 based on the risk level of the site; and inspection, reporting, training, and recordkeeping requirements. In the Santa Ana Region, the SWRCB is the permitting agency, and the Santa Ana RWQCB provides local oversight and enforcement.

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 (FIRM) 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. The most recent FIRMs for the project area (FIRM No. 06059C0128J) were revised on December 3, 2009. 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 in 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 that adopt and enforce floodplain management ordinances that meet minimum criteria established by FEMA. 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 and to manage erosion hazards.

The design standard for flood protection established by FEMA is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. Additionally, FEMA has developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events, and the results of this evaluation are documented in the FEMA Levee Inventory System. Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

5.10.1.2 EXISTING CONDITIONS

The project site is east of the Los Angeles Basin on the southwestern flank of the Puente Hills, which form the western to northwestern margin of the Peninsular Ranges Geomorphic Province. The Puente Hills are bracketed by the Whittier and Chino fault zones and have been created by uplift along these faults.

Based on the County of Orange Technical Guidance Document (TGD) for Preparation of WQMPs and the geotechnical investigation, onsite soils consist primarily of hydrologic groups C and D soils, characterized as having slow to very slow infiltration rates when thoroughly wet. These soils are not favorable for infiltration.

The project site is not in a shallow groundwater zone, as defined by the TGD. Groundwater is expected to be more than 10 feet below the existing ground surface.

There are currently no major utilities on the project site, and the project site receives run-on from upstream areas to the north.

Watershed-Based Plan Conditions

The project site is in the San Gabriel River–Coyote Creek Watershed west of Valencia Avenue and the Santa Ana River Watershed east of Valencia Avenue.

Section 303(d) of the CWA authorizes the EPA to assist states, territories, and authorized tribes with listing impaired waters and developing total maximum daily loads (TMDL) for these water bodies. A TMDL establishes the maximum amount of a pollutant allowed in a water body and serves as the starting point or planning tool for restoring water quality. The project area is not within 200 feet of a 303(d)-listed water body (which is defined as an "environmentally sensitive area" under Section 2.3.3.4 of the TGD).

CWA Section 303(d)-listed impairments and TMDLs for the proposed project's receiving waters are summarized in Table 5.10-1, *Receiving Water Summary*.

There is currently no approved watershed infiltration and hydromodification management plan for either watershed.

Table 5.10-1 Receiving Water Summary

Watershed Description	303(d) Listed Impairments	Applicable TMDLs
San Gabriel River–Coyote Creek Watershed		
Loftus Diversion Channel (Facility A06)	None	None
Fullerton Creek Channel (Facility A03)	None	None
Coyote Creek Channel (Facility A01)	Copper, Indicator Bacteria, Iron, Malathion, pH, Toxicity	Copper, Indicator Bacteria
San Gabriel River Reach 1	pH, Temperature	None
San Gabriel River Estuary	Copper, Dioxin, Indicator Bacteria, Nickel, Dissolved Oxygen	Copper, Indicator Bacteria
Santa Ana River Watershed		
Carbon Canyon Creek Channel (E03)	None	None
Carbon Canyon Creek Diversion Channel (E02)	None	None
Santa Ana River (E01) Reach 3	None	None
Santa Ana River (E01) Reach 2	None	None

Source: Hunsaker 2022a.

Existing Drainage Conditions

The existing project site drainage is divided into three areas: west, east, and southeast.

West Drainage Area

The western drainage is 96.4 acres and divided into three drainage areas called A, B, and C; storm runoff from these areas eventually discharges to Loftus Channel (Hunsaker 2022b). Each west drainage area is described here and shown on Figure 5.10-1, *Existing West Drainage Areas*.

- **Drainage Area A.** It has an area of 59.7 acres and generates a 10-year storm runoff of 102.8 cubic feet per second (cfs). This runoff is discharged into the existing 78-inch reinforced concrete pipe (RCP) in Brea Sports Park. A natural drainage traverses Area A in a north-south direction. Runoff from areas north of Lambert Road is conveyed south toward Lambert Road and then to the existing RCP in Brea Sports Park. A tunnel constructed for oil operational vehicles crosses under Lambert Road and also conveys drainage to south. Runoff from the areas south of Lambert Road is conveyed south and then to the existing RCP in Brea Sports Park. Runoff discharges to the Loftus Diversion Channel, which is tributary to Fullerton Creek Channel, Coyote Creek Channel, the San Gabriel River, and, ultimately, the Pacific Ocean.

- **Drainage Area B.** It has an area of 20.7 acres and generates a 10-year storm runoff of 41.5 cfs. Runoff is discharged into the existing 24-inch RCP in Lambert Road.

- **Drainage Area C.** It has an area of 16.0 acres and generates a 10-year storm runoff of 28.3 cfs. This runoff is conveyed into the existing 60-inch RCP in Bluegrass Street.

East Drainage Area A

The eastern drainage area has an area of 134.1 acres and produces a 10-year storm runoff of 90.0 cfs. Runoff is conveyed as sheet flow west to the existing 2-inch x 48-inch RCP crossing Rose Drive, then to the 5-foot x 8-foot reinforced concrete box, and is eventually discharged into the Carbon Canyon Channel (Hunsaker 2022b). The eastern drainage area is shown on Figure 5.10-2, *Existing East Drainage Area*.

Southeast Drainage Area B

The southeastern drainage has a total area of 49.7 acres and produces a total 10-year storm runoff of 90.0 cfs. As shown on Figure 5.10-3, *Existing Southeast Drainage Area*, the southeast drainage area B is divided into seven subareas. Runoff produced from subareas B1 and B2 is discharged into Carbon Canyon Channel, which traverses the project site in a southerly direction. Carbon Canyon Channel is owned by the Army Corps of Engineers and runs from the Carbon Canyon Dam to a culvert under Rose Drive. Runoff produced from subareas B3, B4, and B5 is discharged into the existing 36-inch corrugated metal pipe that connects to Carbon Canyon Channel under Rose Drive. Runoff produced from subareas B6 and B7 is discharged into the existing 36-inch RCP in Blake Road, then connected to Carbon Canyon Channel west of Rose Drive (Hunsaker 2022b).

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:

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

HYD-2 Substantially 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 a 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.

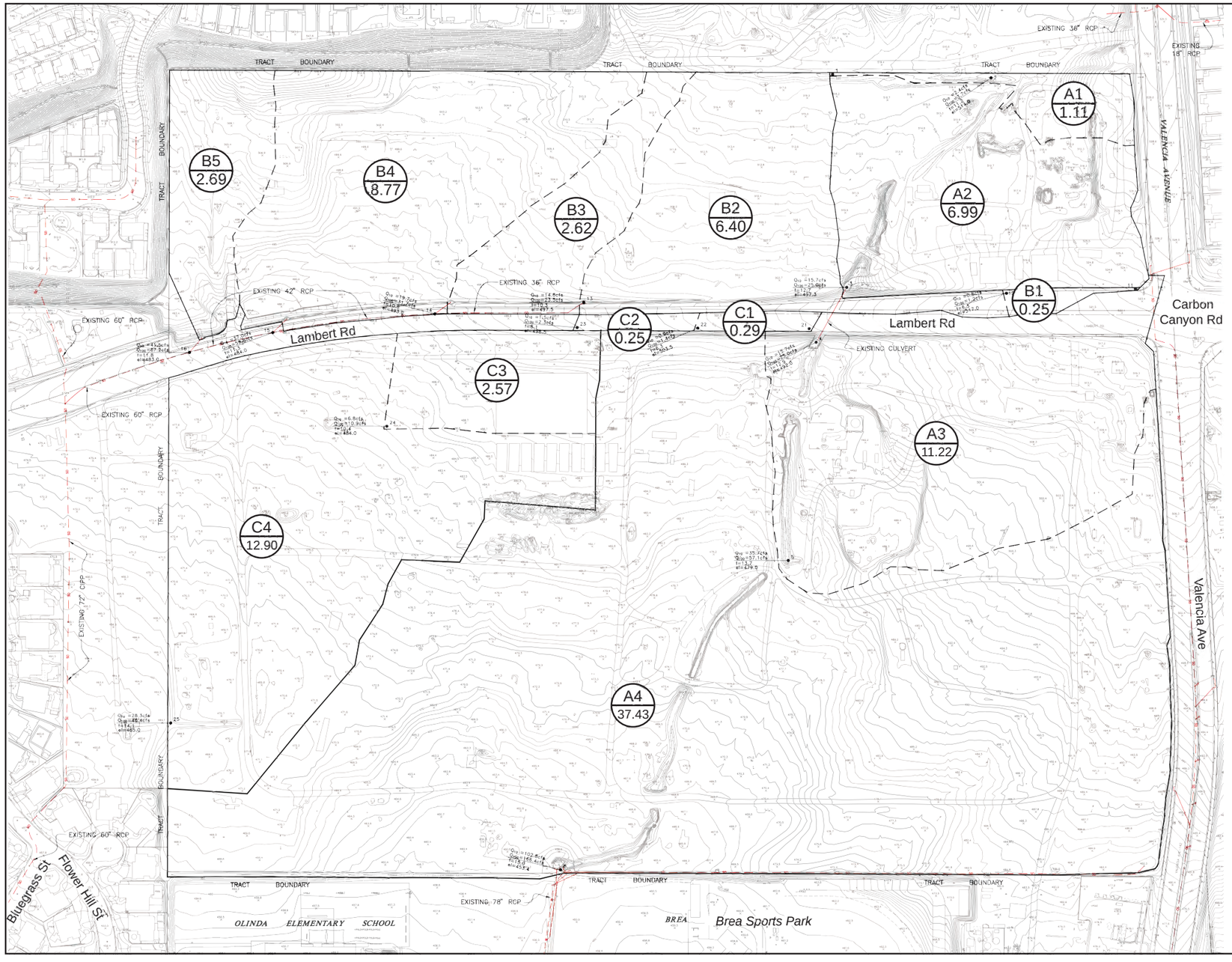
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

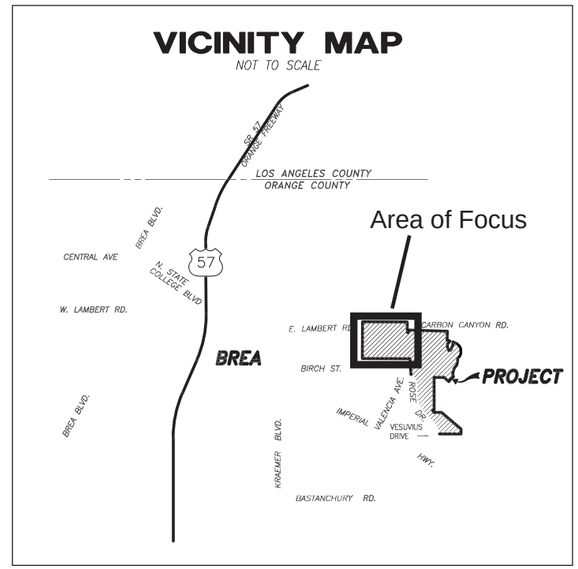
iv) Impede or redirect flood flows.

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.

Figure 5.10-1 - Existing West Drainage Areas
5. Environmental Analysis





LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- 25 — NODE NUMBER
- A1 / 1.0 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- Q_{25} =8.0cfs, t=15.0 — PEAK FLOW RATE / TIME OF CONCENTRATION
- D — SOIL GROUP

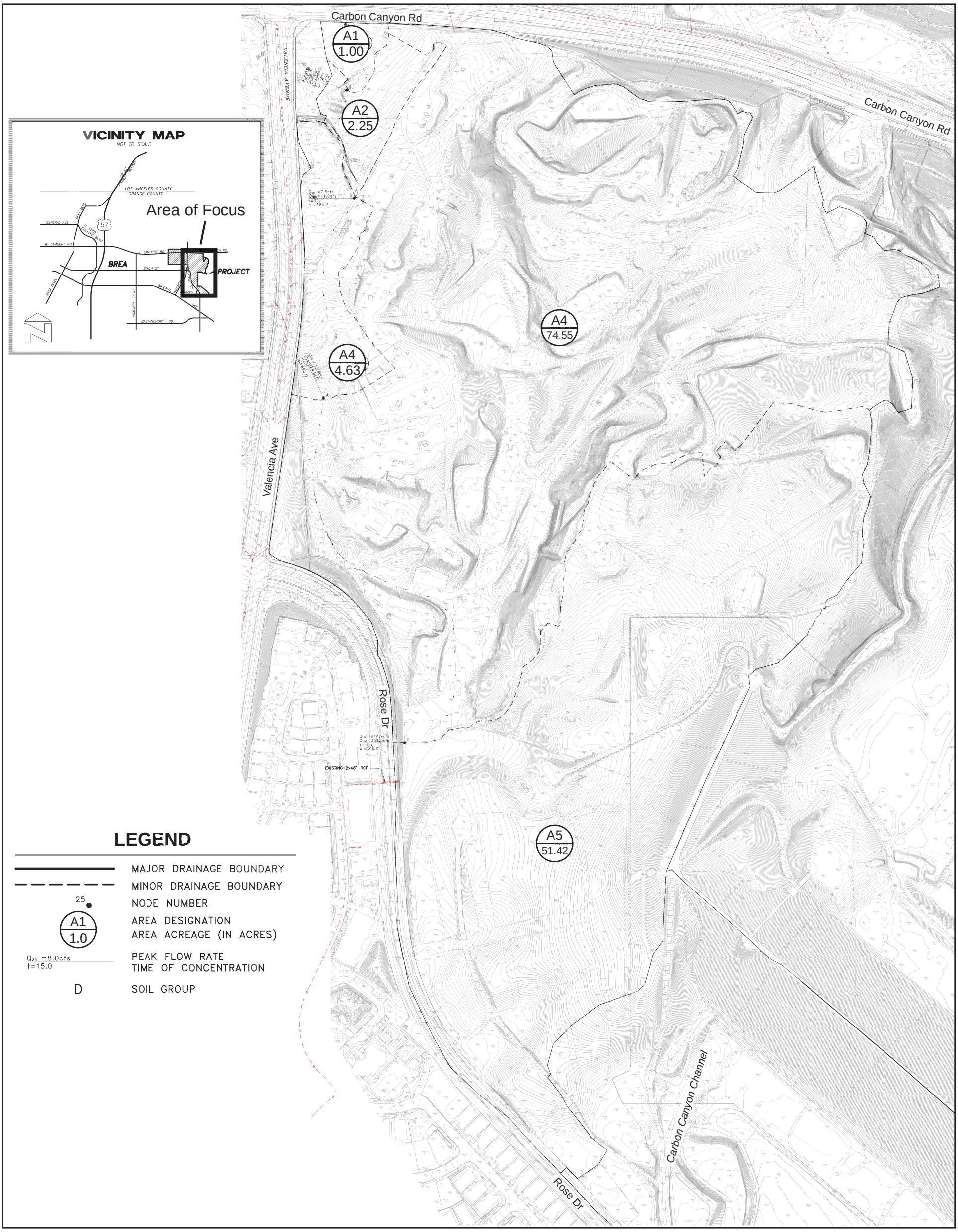
0 300
Scale (Feet)

Source: Hunsaker & Associates, Irvine, 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Figure 5.10-2 - Existing East Drainage Areas

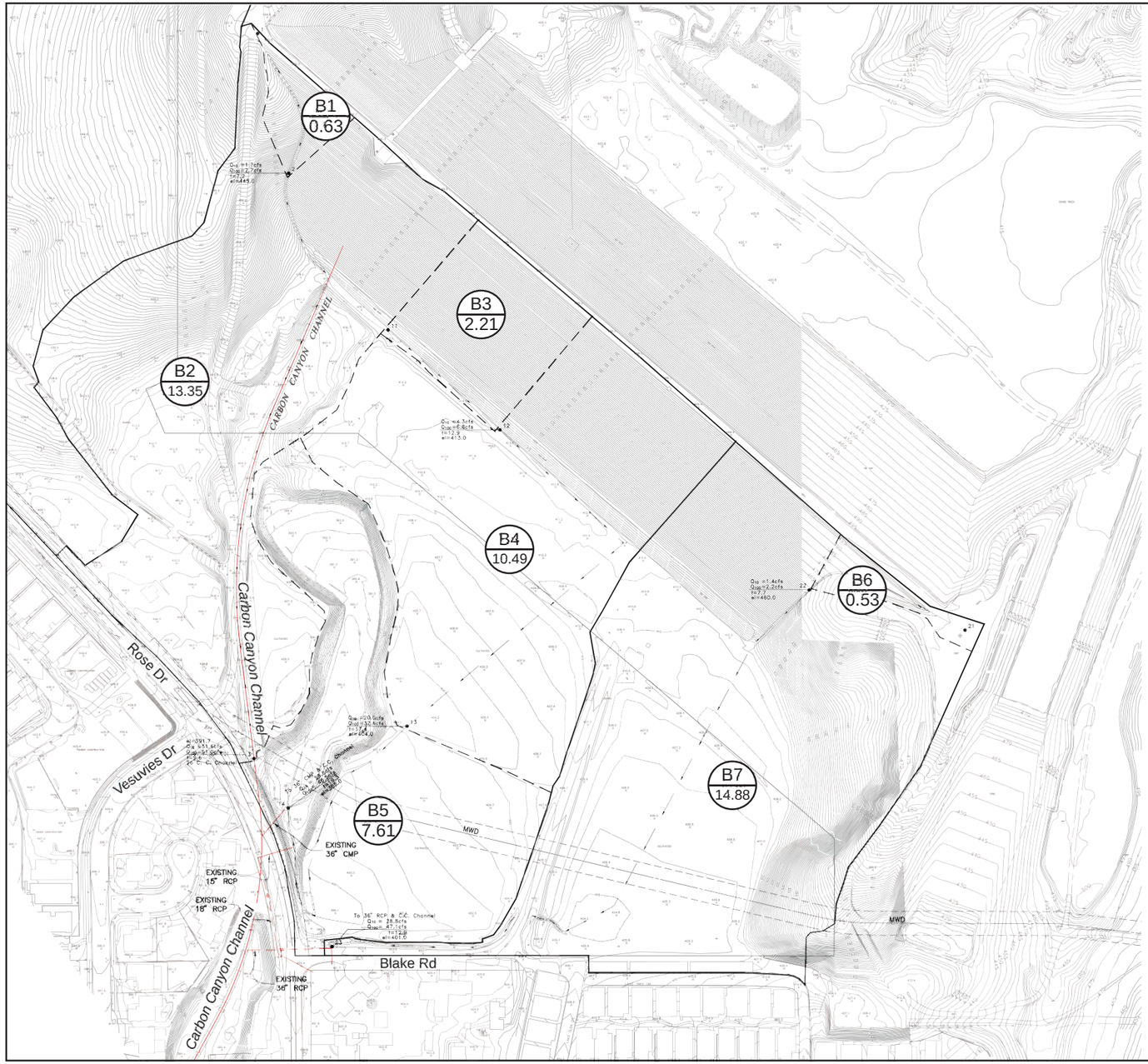


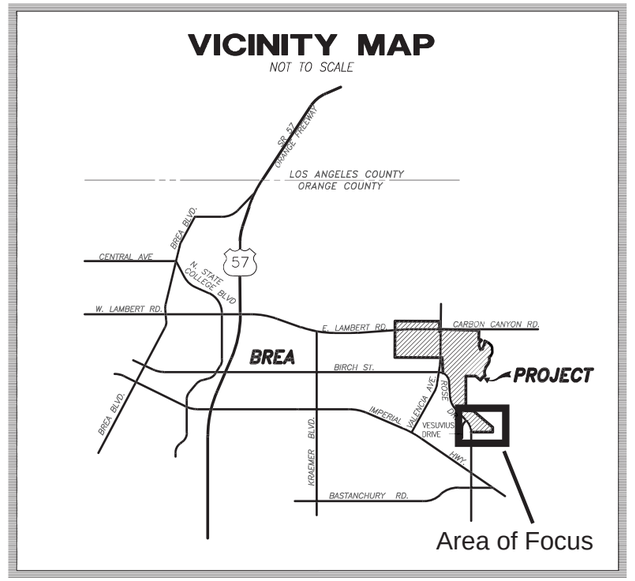
Source: Hunsaker & Associates Irvine, Inc. 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Figure 5.10-3 - Existing Southeast Drainage Areas
5. Environmental Analysis





LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- 25 — NODE NUMBER
- A1 / 1.0 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- Q_{100}=8.0cfs, t=15.0 — PEAK FLOW RATE / TIME OF CONCENTRATION
- D — SOIL GROUP

0 250
Scale (Feet)

Source: Hunsaker & Associates, Irvine, 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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5.10.3 Plans, Programs, and Policies

Regulatory Requirements

PPP HYD-1 The proposed project is required to be developed in compliance with the following state, regional, and local regulations concerning grading, stormwater, and water quality control.

State

- NPDES General Construction Permit. Notice of Intent and Storm Water Pollution Prevention Plan Requirements
- State Water Resources Control Board General Industrial Activities Storm Water Permit

Regional

- Santa Ana Regional Water Quality Control Board Waste Discharge Permits and Water Quality Certifications
- Orange County Municipal Separate Storm Sewer Systems Permit
- Orange County Model Water Quality Management Plan and Technical Guidance Document
- Orange County Drainage Area Management Plan. New Development/Significant Redevelopment Program
- Orange County Hydrology Manual and 1996 Addendum
- Orange County Water District Groundwater Replenishment Program
- County of Orange/Orange County Flood Control District Local Implementation Plan 2019

Local

- City of Brea Master Plan of Drainage 2013

PPP HYD-2 The project applicant will obtain a Section 408 Permit from the U.S. Army Corps of Engineers to replace the Carbon Canyon Channel with a covered, reinforced concrete box to allow for construction of the new intersection at Rose Drive and Vesuvius Drive, build internal project streets, and complete Rose Drive according to the Master Plan of Arterial Highways.

Project Design Features

PPP HYD-3 The project applicant will construct two new storm drain inlet structures on the City-owned property to the north to convey offsite run-on through the project site.

5.10.4 Environmental Impacts

5.10.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.10-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; provide substantial additional sources of polluted runoff; or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. [Thresholds HYD-1, HYD-3.iii (part), and HYD-5]

Construction

The proposed project construction would disturb one or more acres of land. Therefore, a NPDES permit from the SWRCB is required, including submittal of an NOI and preparation of a SWPPP. The SWPPP includes BMPs to reduce water quality impacts, including various measures to control on-site erosion; reduce sediment flows into stormwater; control wind erosion; reduce tracking of soil and debris into adjacent roadways and off-site areas; and manage wastes, materials, wastewater, liquids, hazardous materials, stockpiles, equipment, and other site conditions to prevent pollutants from entering the storm drain system. Inspections, reporting, and stormwater sampling and analysis are also required to ensure that visible and nonvisible pollutants are not discharged off-site.

Implementation of the provisions of the NPDES permit and compliance with City grading requirements would minimize construction impacts through the implementation of BMPs that reduce construction-related pollutants. The proposed project would also comply with existing local and regional requirements so as not to adversely impact any of the City's and the Orange County Flood Control District's existing drainage facilities. This would ensure that any impacts to downstream waters resulting from construction activities would be less than significant.

Operation

A Preliminary/Conceptual Water Quality Management Plan (PWQMP) was prepared for the proposed project to comply with the requirements of the NPDES Stormwater Program during long-term operation of the proposed project (see Appendix J). Activities typical of residential developments are anticipated for the proposed project. These include day-to-day activities such as recreation, lounging, commuting, exercising, and other residential-related activities. And typical household wastes are anticipated to be generated daily by the project. These include food wastes, paper products, and recyclable materials. These materials would be disposed of in on-site trash enclosures and removed for disposal on a weekly basis by the local private waste management company.

Considering these typical residential activities, potential pollutants that could be generated by maximum buildout of the proposed project would include suspended solids/sediment, nutrients, metals, pathogens, pesticides, oil and grease, toxic organic compounds, and trash and debris. Primary pollutants of concern

(POC) include metals, pathogens, pesticides, and toxic organic compounds. Table 5.10-2, *Pollutants of Concern*, summarizes POCs anticipated for the proposed project.

Table 5.10-2 Pollutants of Concern

Pollutant	Additional Information and Comments
Suspended Solids/Sediment	Pollutant is a Primary POC. Potential sources of sediment include disturbed or unstabilized landscaping areas and disturbed earth surfaces.
Nutrients	Pollutant is Primary POC as downstream water is impaired for Nutrients. Potential sources of nutrients include fertilizers, sediment and trash/debris
Heavy Metals	Pollutant is a Primary POC. Potential sources for the project include automobiles and uncovered parking areas.
Pathogens (Bacteria/Virus)	Pollutant is a Primary POC. Potential sources for the project include food wastes, pet wastes, sediment and landscaping areas.
Pesticides	Pollutant is a Primary POC. Potential sources of pesticides include landscaping and open space areas.
Oil and Grease	Potential sources include project streets and parked vehicles.
Toxic Organic Compounds	Pollutant is a Primary POC. Potential sources for the project include automobiles and uncovered parking areas.
Trash and Debris	Potential sources of trash and debris include landscaping activities, food wrappers and food wastes.

Source: Hunsaker 2022a.

However, the proposed project would use biotreatment BMPs to address the project's POCs from each of the project's drainage management areas. Anticipated BMPs in this category include bioretention with underdrains and proprietary biotreatment BMPs.

Bioretention BMPs would consist of traditional basin-type bioretention facilities (with underdrains). Each bioretention facility would be designed with nutrient-sensitive media to provide a medium to high level of effectiveness at removing the project's stormwater pollutants and with subdrains to convey treated runoff to the storm drain system. Proprietary biotreatment BMPs would be sized to address the water quality volume for its tributary area and designed with volume-based or flow-based configurations. These BMPs have been selected based on their proven pollutant removal efficiencies, as well as site constraints from proposed land use areas.

Additionally, the following BMPs and LID performance requirements would be incorporated.

Site Design BMPs

Minimize Impervious Area. Landscaping will be provided throughout the site to minimize the amount of impervious area onsite—along project streets and within private lots, common lettered lots, and recreation lot.

Maximize Natural Infiltration Capacity. The project site consists primarily of hydrologic groups C and D soils, which are not feasible for infiltration. However, the project will use some retention of runoff in the

project's landscaping areas to allow for some incidental infiltration and evapotranspiration. These areas include depressed parkways and landscaped areas.

Preserve Existing Drainage Patterns and Time of Concentration. In the developed condition, runoff from each of the project's development areas will be collected and discharged to the existing drainage downstream storm drain system. Changes in the time of concentration and peak flows from natural/pre-project conditions will be controlled via the project's hydromodification controls and detention facilities.

Disconnect Impervious Areas. Landscaping will be provided within the project's development areas to minimize the amount of directly connected impervious areas.

Protect Existing Vegetation and Sensitive Areas, and Revegetate Disturbed Areas. Project site will include natural conservation areas.

Revegetate Disturbed Areas and Xeriscape Landscaping. Native and/or drought-tolerant landscaping will be incorporated into site design, consistent with City guidelines, in proposed landscaping areas.

Low Impact Development Criteria

- LID BMPs must be designed to retain on-site (i.e., infiltrate, harvest and use, or evapotranspire) stormwater runoff up to 80 percent average annual capture efficiency.
- LID BMPs must be designed to:
  - Retain onsite stormwater runoff as feasible up to the design capture volume.
  - Recover (i.e., draw down) the storage volume as soon as possible after a storm event, and if necessary,
  - Biotreat, on-site, additional runoff, as feasible, up to 80 percent average annual capture efficiency (cumulative, retention plus biotreatment), and if necessary,
  - Retain or biotreat, in a regional facility, the remaining runoff up to 80 percent annual capture efficiency (cumulative, retention plus biotreatment, onsite plus offsite), and if necessary,
  - Fulfill alternative compliance obligations for runoff volume not retained or biotreated up to 80 percent average annual capture efficiency using treatment controls.

The proposed project is anticipated to incorporate the nonstructural and structural source control BMPs identified by the PQWMP and listed in Table 5.10-3, *Nonstructural and Structural Source Control BMPs*.

Table 5.10-3 Nonstructural and Structural Source Control BMPs

Nonstructural Source Control BMPs	
Education for Property Owners, Tenants and Occupants	Educational materials will be provided to homeowners at close of escrow by the owner and periodically thereafter by the HOA to inform them of their potential impacts to downstream water quality. Materials include those described in Section VII of this WQMP and provided in the Final WQMP.
Activity Restrictions	Activity restrictions to minimize potential impacts to water quality and with the purpose of protecting water quality will be prescribed by the project's Covenant, Conditions and Restrictions (CC&Rs), or other equally effective measure.
Common Area Landscape Management	Maintenance activities for landscape areas shall be consistent with City, County and manufacturer guidelines for fertilizer and pesticide use (OC DAMP Section 5.5). Maintenance includes trimming, weeding and debris removal and vegetation planting and replacement. Stockpiled materials during maintenance activities shall be placed away from drain inlets and runoff conveyance devices. Wastes shall be properly disposed of or recycled.
BMP Maintenance	The project proponent shall be responsible for implementation of each applicable non-structural, structural and LID BMPs as well as scheduling inspection and maintenance cleaning of all applicable structural BMP facilities. The proponent shall be responsible for inspection and maintenance activities in landscape areas (see WQMP Site Plan).
Common Area Litter Control	Litter control onsite will include the use of HOA litter patrols, violation reporting and clean up during landscaping maintenance activities and as needed to ensure good housekeeping of the project's common areas.
Employee Training	All employees, contractors and subcontractors of the HOA shall be trained on the proper use and staging of landscaping and other materials with the potential to impact runoff and proper clean-up of spills and materials.
Common Area Catch Basin Inspection	As required by the Technical Guidance Document, at least 80 percent of all drainage facilities shall be inspected each year and, if necessary, cleaned and maintained prior to the storm season, no later than October 15th each year; with 100 percent of all drainage facilities inspected, cleaned and maintained within a two year period. Drainage facilities include catch basins and inlets, detention vaults and the project's LID BMPs.
Street Sweeping Public and Parking Lots	All project streets shall be vacuum swept on a weekly basis, consistent with City's sweeping schedule.
Structural Source Control BMPs	
Provide storm drain system stenciling and signage	Storm drain stenciling with a brief message or graphical icons with symbols, prohibiting the dumping of improper materials into the storm drain system shall be placed in highly visible areas adjacent to all storm drain inlets. The BMP is designed to alert and educate homeowners and guests of the destination of pollutants discharged into storm drain systems. Legibility of stencils and signs shall be maintained
Trash Enclosure	All trash and waste shall be stored in containers that have lids or tarps to minimize direct precipitation into the containers. The trash storage areas will be designed to City standards, and will be walled, roofed, have gates and proper drainage per City standards. Trash enclosure locations are not known at this time. Locations will be identified as project designs approach final.
Efficient Irrigation System & Landscape Design	Landscaping will be designed to consist of native species or drought tolerant, water conserving landscaping. Irrigation system will be designed, constructed and adjusted to eliminate overspray to hardscape areas, with timing and cycle lengths adjusted in accordance with water demands, given time of year, weather, day or night time temperatures based on system specifications and local climate patterns.
Protect slopes and channels and provide energy dissipation	The project's landscaped slopes shall be inspected for adequate vegetation cover, vegetation health and signs of erosion. Dead or dying vegetation shall be replaced as needed. Signs of erosion and concentrated flow areas shall be noted and repaired as needed.

Source: Hunsaker 2022a.

The proposed project would incorporate bioretention with underdrains, proprietary biotreatment, and detention basins to treat captured stormwater as recommended in the PWQMP and in compliance with the

LID requirements. Various structural and nonstructural BMPs would also be implemented to ensure that the proposed project does not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface- or groundwater quality, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.10-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. [Threshold HYD-2]

The site is east of the Los Angeles Basin on the southwestern flank of the Puente Hills, which form the western to northwestern margin of the Peninsular Ranges Geomorphic Province. The project site is not in a shallow groundwater zone, as defined by the TGD. Groundwater is expected to be more than 10 feet below the existing ground surface (Hunsaker 2022a).

The City's primary sources of water are imported groundwater from the Main San Gabriel Basin through California Domestic Water Company and imported water from the Metropolitan Water District of Southern California through the Municipal Water District of Orange County. The Main San Gabriel Basin lies in eastern Los Angeles County and occupies most of San Gabriel Valley. The project site is not within the Main San Gabriel Basin, and development of the proposed project would not decrease groundwater supplies or interfere substantially with groundwater recharge of the Main San Gabriel Basin.

The City also extracts local groundwater from the La Habra Groundwater Basin. The project site is not within the limits of the La Habra Groundwater Basin. Local groundwater extraction represents approximately one percent of the total water supply, and the one groundwater well owned by the City is used strictly for irrigation purposes (Psomas 2022). Implementation of the proposed project would not impact groundwater supplies at the Main San Gabriel Basin or the La Habra Groundwater Basin. Therefore, groundwater impacts would not be significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.10-3: 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 result in a substantial erosion or siltation on- or off-site. [Threshold HYD-3.i]

The proposed project would result in changes to stormwater runoff and water quality during construction activities. Stormwater runoff could contain pollutants, such as soil and sediments that are released during grading and excavation activities, and petroleum-related pollutants due to spills or leaks from heavy equipment and machinery. Other common pollutants that can result from construction activities include solid or liquid chemical spills; concrete and related cutting or curing residues; wastes from paints, stains, sealants, solvents, detergents, flues, acids, lime, plaster, and cleaning agents; and heavy metals from equipment.

In the pre-project condition, on-site drainage is divided into a western drainage, eastern drainage, and southeastern drainage areas, as described in Section 5.10.1.2 under "Existing Drainage Condition." The western drainage area is west of Valencia Avenue, totals approximately 96.4 acres, and is divided into subareas A, B, and C; the eastern drainage is east of Valencia Avenue and south of Lambert Road and totals approximately 134.1 acres; and the southeastern drainage area has a total area of 49.7 acres. As shown on Figure 3-24, *Conceptual Phase Plan*, all of southeast drainage area and east drainage area east of Rose Drive would be developed in Phase 1, the west drainage area would be developed in Phase 2, and the rest of east drainage area east of Valencia Avenue would be developed in Phase 3.

Prior to construction, the proposed project is required to comply with the NPDES permit from the SWRCB, including submittal of an NOI and preparation of a SWPPP. The SWPPP includes BMPs to reduce water quality impacts, including various measures to control on-site erosion; reduce sediment flows into stormwater; control wind erosion; reduce tracking of soil and debris into adjacent roadways and off-site areas; and manage wastes, materials, wastewater, liquids, hazardous materials, stockpiles, equipment, and other site conditions to prevent pollutants from entering the storm drain system. Inspections, reporting, and stormwater sampling and analysis are also required to ensure that visible and nonvisible pollutants are not discharged off-site.

Implementation of the provisions of the NPDES permit and compliance with City grading requirements would minimize construction impacts through the implementation of BMPs that reduce construction-related pollutants. This would ensure that any impacts to downstream waters resulting from construction activities would be less than significant. In addition to the requirements of the NPDES permit, grading and building permit requirements include the reduction of erosion and sedimentation impacts during construction. Full compliance with applicable local, state, and federal regulations would reduce water quality impacts associated with construction to a less than significant level.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.10-4: The proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system. [Thresholds HYD-3.ii and HYD-3.iii (part)]

In compliance with the City of Brea Master Plan of Drainage 2013 (SDMP), a preliminary hydrology analysis was prepared for the proposed project (see Appendix K). This report evaluated the 10-year storm runoff produced from the project area in the pre- and post-development conditions in order to detain any excess flows. In addition, the preliminary hydrology analysis includes the 100-year peak storm runoff evaluation for informational purposes.

As shown in Table 5.10-4, *Net Decrease in Pervious Area*, the project site is currently 99.2 percent pervious, and the proposed project would reduce the perviousness of the project site to 44.8 percent, a decrease of 142.5 acres or 55.2 percent.

Table 5.10-4 Net Decrease in Pervious Area

Project Site	Pervious Area (acres)	Percentage	Impervious Area (acres)	Percentage	Total Acreage
Pre-project Conditions	260.1	99.2%	2.0	0.8%	262.1
Post-project Conditions	117.6	44.8%	144.5	-55.2%	262.1
Change	142.5	54.4%	-142.5	**-54.4%**	**n/a**

Source: Hunsaker 2022a.

In the pre-project condition, on-site drainage is divided into a western drainage, an eastern drainage, and a southeastern drainage as described in Section 5.10.1.2. In the post-development condition, runoff from each of the project's drainage areas would be consistent with pre-project drainage patterns, with each drainage area discharging to the pre-existing storm drain connections downstream. Runoff would discharge to the backbone storm drain system via a system of area drains, curb and gutters, and catch basin inlets, then be conveyed to the Loftus Channel Carbon Canyon Channel, as in pre-project condition (see Figure 5.10-4, *Proposed West Drainage Areas*, Figure 5.10-5, *Proposed East Drainage Area*, and Figure 5.10-6, *Proposed Southeast Drainage Area*). The proposed drainage conditions are described below and summarized in Table 5.10-5, *Existing and Proposed 10-Year Storm Runoff Conditions*.

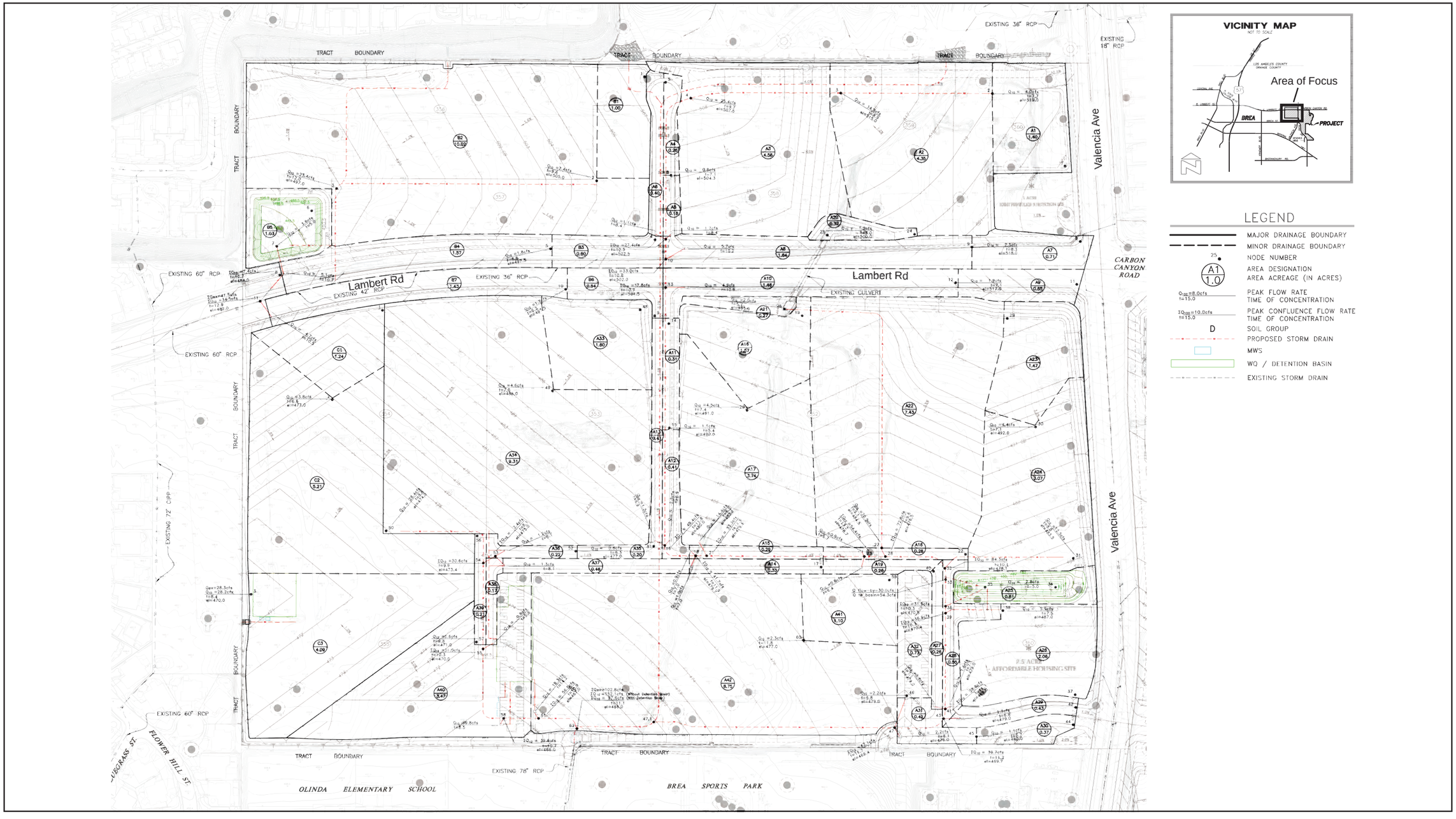
Table 5.10-5 Existing and Proposed 10-Year Runoff Conditions

West Drainage Areas						
	Area A		**Area B**		**Area C**	
	Area (ac)	**Q (cfs)**	**Area (ac)**	**Q (cfs)**	**Area (ac)**	**Q (cfs)**
Existing (pre-project)	59.70	102.80	20.70	41.50	16.00	28.30
Proposed Without Detention Facilities (post-project)	66.90	152.10	16.20	34.50	10.50	28.20
Proposed With Detention Facilities (post-project)	66.90	97.60	16.20	34.50	10.50	28.20
Differences from Existing to Proposed With Detention	7.20	-5.20	-4.50	-7.00	-5.50	-0.10

East and Southeast Drainage Areas				
	Area A (East Drainage)		**Area B (Southeast Drainage)**	
	Area (ac)	**Q (cfs)**	**Area (ac)**	**Q (cfs)**
Existing (pre-project)	134.10	214.90	49.70	90.0
Proposed Without Detention Facilities (post-project)	136.70	306.90	49.10	115.30
Proposed With Detention Facilities (post-project)	136.70	208.10	49.10	85.30
Differences from Existing to Proposed With Detention	2.60	-6.80	-0.60	-4.70

Source: Hunsaker 2022b.

Figure 5.10-4 - Proposed West Drainage Areas
5. Environmental Analysis

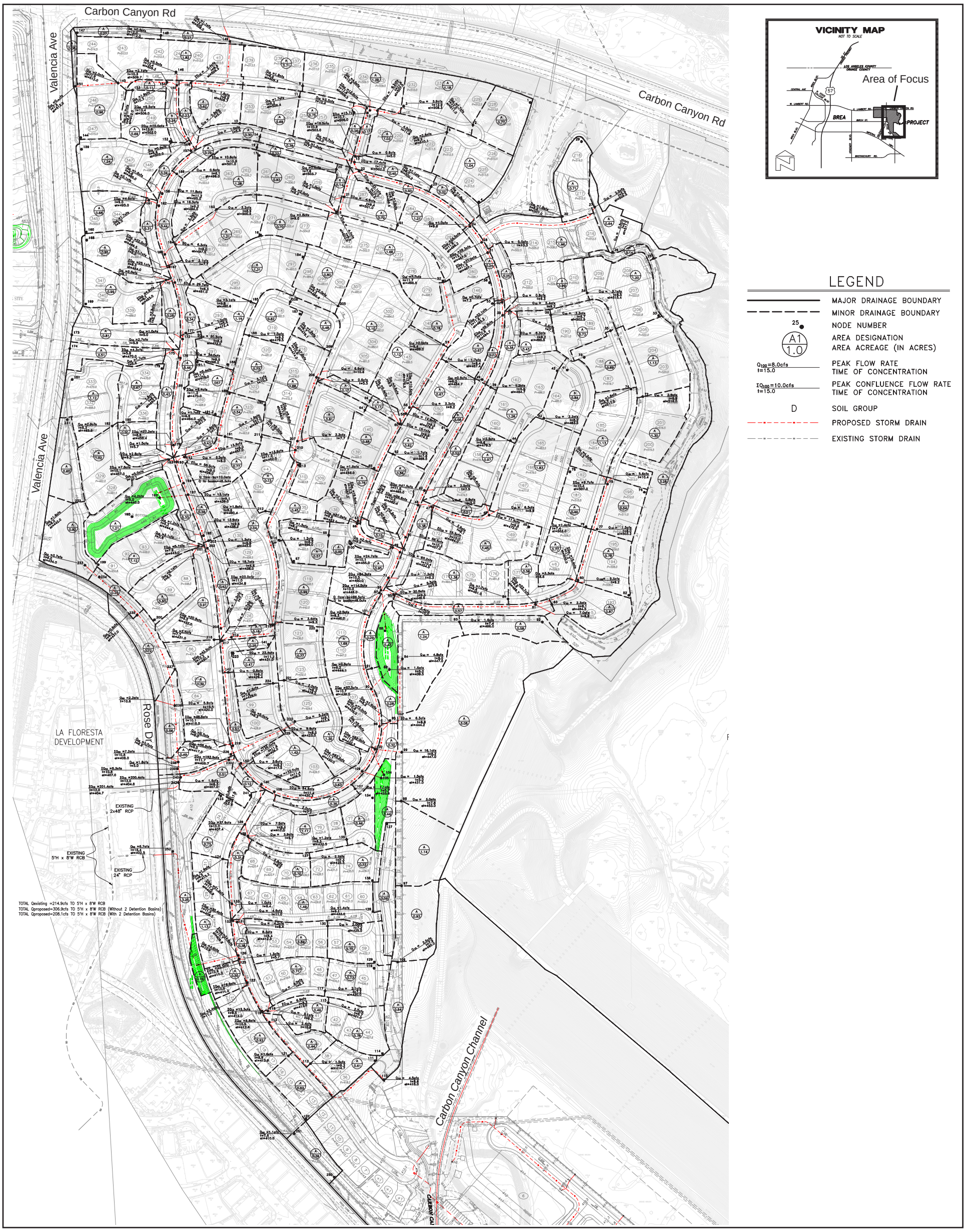


Source: Hunsaker & Associates, Irvine, 2022

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Figure 5.10-5 - Proposed East Drainage Areas

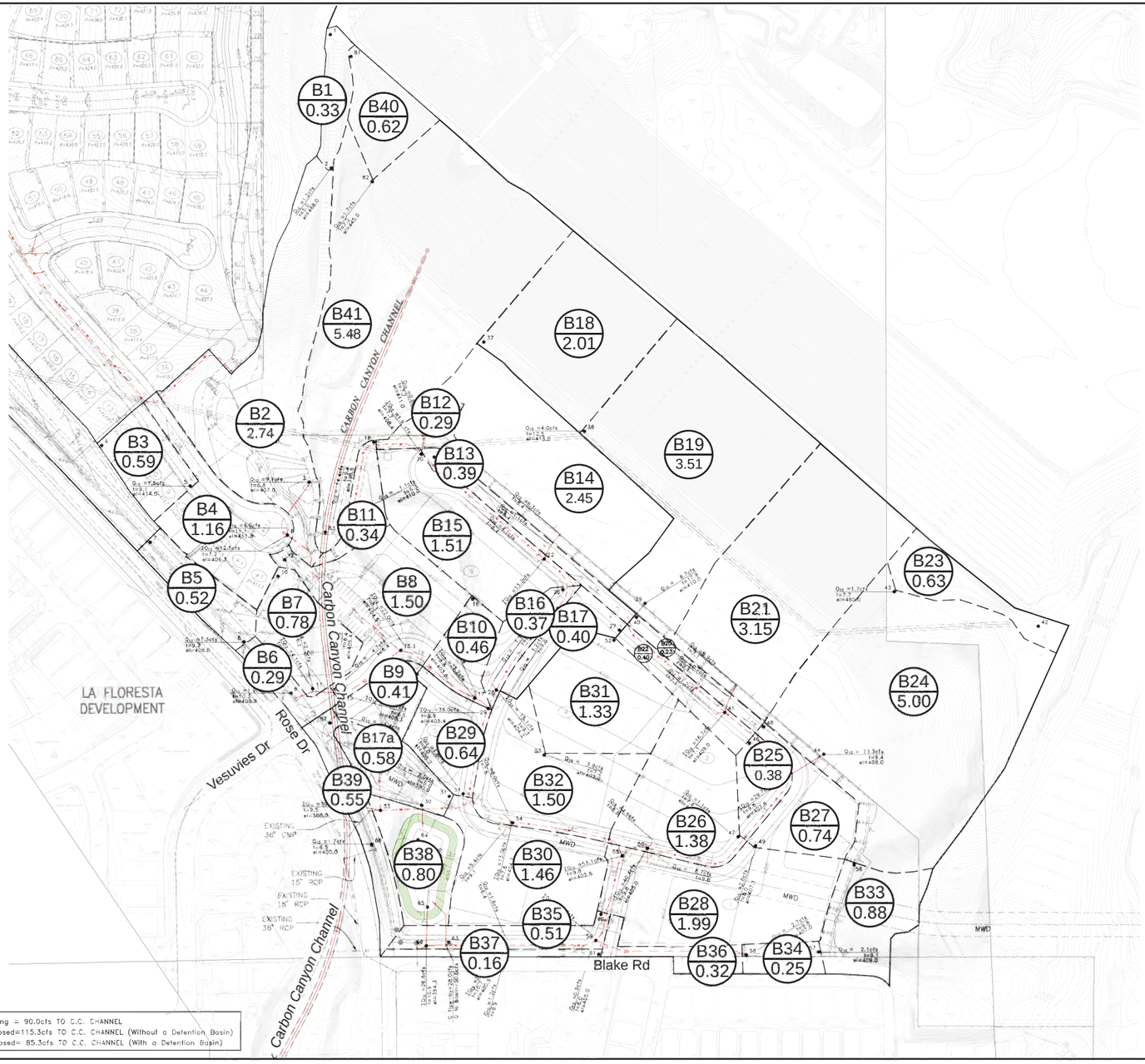


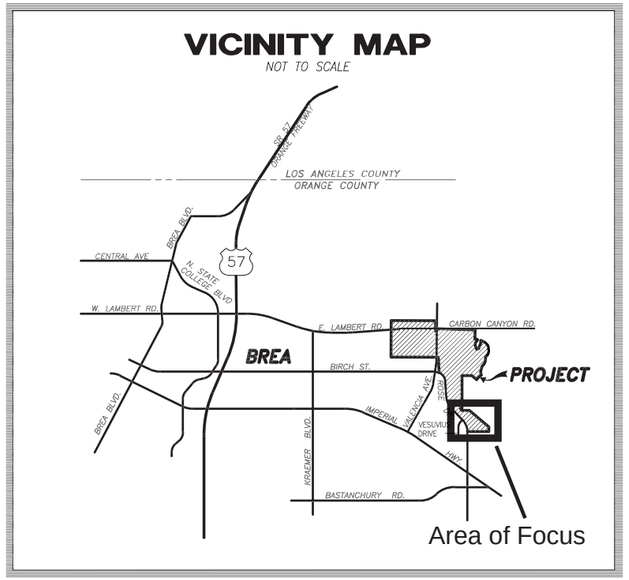
Source: Hunsaker & Associates Irvine, Inc. 2022

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Figure 5.10-6 - Proposed Southeast Drainage Areas
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LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- 25 — NODE NUMBER
- A1 / 1.0 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- Q_{100}=8.0cfs, t=15.0 — PEAK FLOW RATE / TIME OF CONCENTRATION
- ΣQ_{100}=10.0cfs, t=15.0 — PEAK CONFLUENCE FLOW RATE / TIME OF CONCENTRATION
- D — SOIL GROUP
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

0 250
Scale (Feet)

Source: Hunsaker & Associates, Irvine, 2022

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West Drainage Area A. Drainage Area A has an area of 66.9 acres and would generate a 10-year storm runoff of 152.1 cfs without detention basin. This runoff would discharge to the existing 78-inch RCP in Brea Sports Park, as it does in pre-project conditions. Two detention basins are proposed in this drainage area. With the proposed detention basins, the 10-year storm flow would decrease to 97.60 cfs, less than the existing runoff of 102.80 cfs.

West Drainage Area B. Drainage Area B has an area of 16.2 acres and would generate a 10-year storm runoff of 34.5 cfs. This runoff would be discharged to the existing 60-inch RCP in Lambert Road. A flood control basin is not needed. **West Drainage Area C.** Drainage Area C has an area of 10.5 acres and would generate a 10-year storm runoff of 28.2 cfs. This runoff would discharge to the existing 60-inch RCP in Bluegrass Street. An underground water quality basin is proposed for this area but a flood control basin is not necessary to detain the 10-year runoff.

East Drainage Area A. The East Drainage Area A has a total area of 136.7 acre. The major area is 132.9 acres and produces a 10-year storm runoff of 300.2 cfs discharged into the existing 2-inch x 48-inch RCP crossing Rose Drive. The minor area is 3.8 acres and produces a 10-year storm runoff of 6.7 cfs discharged into the existing 24-inch RCP crossing Rose Drive. Storm runoff produced from this drainage area would eventually discharge into the Carbon Canyon Channel. Four basins are proposed in this area to treat low flows produced from the development for water quality purpose. With the proposed detention basins, the 10-year storm flow would decrease to 208.10 cfs, less than the existing runoff of 214.90 cfs for this area.

Southeast Drainage Area B. Drainage Area B has a total area of 49.1 acres and would produce a total 10-year storm runoff of 115.3 cfs. Runoff produced from subareas B1 through B17a would discharge into the existing 36-inch corrugated metal pipe crossing Rose Drive, then connect to the Carbon Canyon Channel. Runoff produced from subareas B18 through B39 would be discharged into the existing 36-inch RCP in Blake Road, crossing Rose Drive, then connect to Carbon Canyon Channel. Runoff produced from subareas B40 and B41 would be discharged directly into Carbon Canyon Channel. One detention basin is proposed in this area to treat low flows produced from the proposed project for water quality purposes and to detain the excess 10-year storm runoff. With the proposed detention basin, the 10-year storm flow would decrease to 85.30 cfs, less than the existing runoff of 90 cfs for this area.

The proposed project's drainage management areas (DMA) and proposed detention facilities are described below and shown on Figure 5.10-7, *Proposed Drainage Management Areas and BMPs*. The detention basins would consist of traditional bioretention BMPs (flow-through type due to contamination from oil extraction activities), proprietary biotreatment BMPs (vault type), and open basins equipped with proprietary biotreatment media at basin bottom. The proposed detention facilities would satisfy the proposed project's requirements for LID and water quality treatment.

- **DMA 1 (11.02 acres)** Consists of the northwestern portion of the western project area and is bounded to the south by Lambert Road. Runoff from this DMA will be conveyed to a proposed bioretention (flow-through)/detention basin in the southwestern portion of the DMA. The BMP will also address hydromodification impacts. Alternative BMP for this DMA is the use of proprietary biotreatment media in the basin.

- **DMAs 2 and 3 (2.18 acres; 1.97 acres).** Consist of westbound Lambert Road and eastbound Lambert Road, just south of DMA 1. Runoff from these DMAs will be conveyed to a proprietary biofiltration BMP prior to discharging to the existing storm drain system in Lambert Road.

- **DMA 4 (11.10 acres).** Consists of the southwestern portion of the western project site. Runoff is conveyed southwest to an underground detention vault that outlets through a proprietary biofiltration BMP. The detention vault will also address hydromodification impacts.

- **DMA 5 (25.47 acres).** Consists of the central-western and south-central portions of the West Drainage Area. Runoff is conveyed southwest to an underground detention vault that outlets through a proprietary biofiltration BMP. The detention vault will also address hydromodification impacts.

- **DMA 6 (38.67 acres).** Consists of the northeastern and the central-eastern portions of the West Drainage Area. Runoff is conveyed south then southeast to an open basin that has been designed with proprietary biofiltration media. The basin will also provide mitigation for hydromodification impacts.

- **DMAs 7 through 11 (0.73 acre, 0.55 acre, 0.26 acre, 0.43 acre, and 0.79 acre).** Consist of the southeastern portion the West Drainage Area. Runoff from these DMAs will be conveyed to a proprietary biofiltration BMP prior to discharging to the backbone storm drain system.

- **DMA 12 (26.66 acres).** Consists of the northwestern portion of the East Drainage Area. Runoff from this DMA is conveyed south to an open basin that has been designed with proprietary biofiltration media.

- **DMA 13 (51.62 acres).** Consists of the northern portion of the project's East Drainage Area. Runoff from this DMA is conveyed south to an open basin that has been designed with proprietary biofiltration media.

- **DMAs 14 through 20, 22 through 35, 37 through 40, 42, and 43** (see Section IV.2.2 of Appendix J for acreages). Consist of the central and southwestern portions of the East Drainage Area. Runoff from these DMAs will be conveyed to a proprietary biofiltration BMP prior to discharging to the backbone storm drain system.

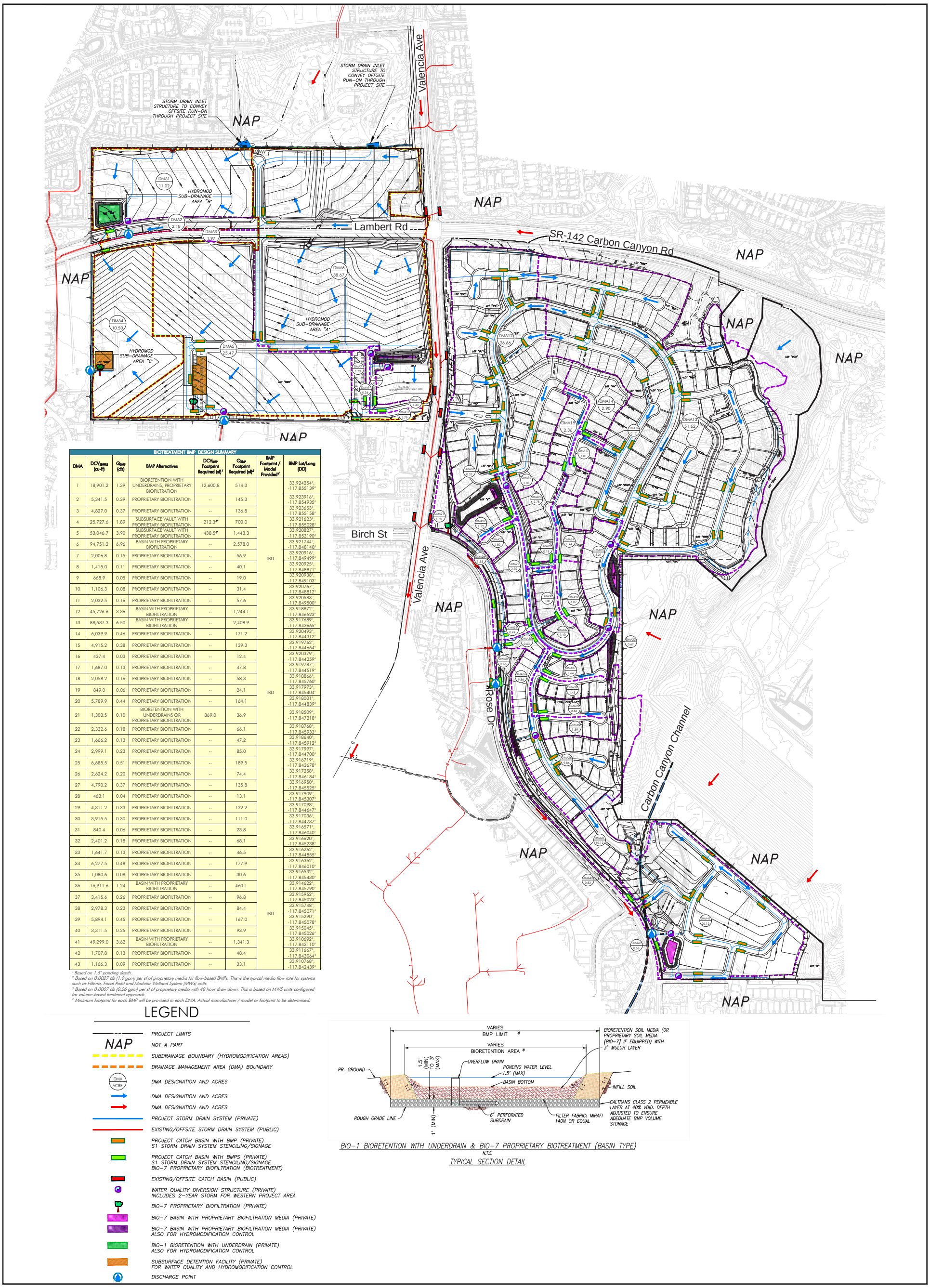
- **DMA 21 (1.52 acres).** Consists of open space area just east of Valencia Avenue and Rose Drive. Runoff from this area will be conveyed to a bioretention (flow-through type) BMP or proprietary biofiltration BMP prior to discharging to the backbone storm drain system.

- **DMA 36 (9.86 acres).** Consists of the northern section of the southeast portion of the project site. Runoff from this DMA is conveyed west to an open basin that has been designed with proprietary biofiltration media.

- **DMA 41 (20.12 acres).** Consists of the southeastern-most portion of the project site. Runoff from this DMA is conveyed west to an open basin that has been designed with proprietary biofiltration media.

Figure 5.10-7 - Proposed Drainage Management Areas and BMPs

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BIOTREATMENT BMP DESIGN SUMMARY							
DMA	DCV_{SWRP} (cu-ft)	Q_{SWRP} (cfs)	BMP Alternatives	DCV_{BMP} Footprint Required (sf)[1]	Q_{BMP} Footprint Required (sf)[2]	BMP Footprint / Model Provided[4]	BMP Lat/Long (DD)
1	18,901.2	1.39	BIORETENTION WITH UNDERDRAINS, PROPRIETARY BIOFILTRATION	12,600.8	514.3	TBD	33.924254°, -117.855139°
2	5,341.5	0.39	PROPRIETARY BIOFILTRATION	--	145.3		33.923916°, -117.854935°
3	4,827.0	0.37	PROPRIETARY BIOFILTRATION	--	136.8		33.923653°, -117.855158°
4	25,727.6	1.89	SUBSURFACE VAULT WITH PROPRIETARY BIOFILTRATION	212.3[3]	700.0		33.921623°, -117.855028°
5	53,046.7	3.90	SUBSURFACE VAULT WITH PROPRIETARY BIOFILTRATION	438.5[3]	1,443.3		33.920827°, -117.853190°
6	94,751.2	6.96	BASIN WITH PROPRIETARY BIOFILTRATION	--	2,578.0		33.921744°, -117.848148°
7	2,006.8	0.15	PROPRIETARY BIOFILTRATION	--	56.9		33.920916°, -117.849499°
8	1,415.0	0.11	PROPRIETARY BIOFILTRATION	--	40.1		33.920925°, -117.848871°
9	668.9	0.05	PROPRIETARY BIOFILTRATION	--	19.0		33.920938°, -117.849103°
10	1,106.3	0.08	PROPRIETARY BIOFILTRATION	--	31.4		33.920767°, -117.848812°
11	2,032.5	0.16	PROPRIETARY BIOFILTRATION	--	57.6		33.920583°, -117.849500°
12	45,726.6	3.36	BASIN WITH PROPRIETARY BIOFILTRATION	--	1,244.1		33.918872°, -117.846523°
13	88,537.3	6.50	BASIN WITH PROPRIETARY BIOFILTRATION	--	2,408.9		33.917689°, -117.843665°
14	6,039.9	0.46	PROPRIETARY BIOFILTRATION	--	171.2		33.920493°, -117.844312°
15	4,915.2	0.38	PROPRIETARY BIOFILTRATION	--	139.3	TBD	33.919762°, -117.844664°
16	437.4	0.03	PROPRIETARY BIOFILTRATION	--	12.4		33.920379°, -117.844259°
17	1,687.0	0.13	PROPRIETARY BIOFILTRATION	--	47.8		33.919787°, -117.844519°
18	2,058.2	0.16	PROPRIETARY BIOFILTRATION	--	58.3		33.918866°, -117.845760°
19	849.0	0.06	PROPRIETARY BIOFILTRATION	--	24.1		33.917973°, -117.845404°
20	5,789.9	0.44	PROPRIETARY BIOFILTRATION	--	164.1		33.918001°, -117.844839°
21	1,303.5	0.10	BIORETENTION WITH UNDERDRAINS OR PROPRIETARY BIOFILTRATION	869.0	36.9		33.918509°, -117.847218°
22	2,332.6	0.18	PROPRIETARY BIOFILTRATION	--	66.1		33.918768°, -117.845933°
23	1,666.2	0.13	PROPRIETARY BIOFILTRATION	--	47.2		33.918640°, -117.845912°
24	2,999.1	0.23	PROPRIETARY BIOFILTRATION	--	85.0		33.917997°, -117.844700°
25	6,685.5	0.51	PROPRIETARY BIOFILTRATION	--	189.5		33.916719°, -117.843678°
26	2,624.2	0.20	PROPRIETARY BIOFILTRATION	--	74.4		33.917258°, -117.846184°
27	4,790.2	0.37	PROPRIETARY BIOFILTRATION	--	135.8		33.916950°, -117.845525°
28	463.1	0.04	PROPRIETARY BIOFILTRATION	--	13.1		33.917909°, -117.845307°
29	4,311.2	0.33	PROPRIETARY BIOFILTRATION	--	122.2		33.917098°, -117.844647°
30	3,915.5	0.30	PROPRIETARY BIOFILTRATION	--	111.0		33.917036°, -117.844737°
31	840.4	0.06	PROPRIETARY BIOFILTRATION	--	23.8		33.916571°, -117.846040°
32	2,401.2	0.18	PROPRIETARY BIOFILTRATION	--	68.1		33.916620°, -117.845238°
33	1,641.7	0.13	PROPRIETARY BIOFILTRATION	--	46.5		33.916262°, -117.844855°
34	6,277.5	0.48	PROPRIETARY BIOFILTRATION	--	177.9	TBD	33.916362°, -117.846010°
35	1,080.6	0.08	PROPRIETARY BIOFILTRATION	--	30.6		33.916532°, -117.845430°
36	16,911.6	1.24	BASIN WITH PROPRIETARY BIOFILTRATION	--	460.1		33.914622°, -117.845790°
37	3,415.6	0.26	PROPRIETARY BIOFILTRATION	--	96.8		33.915952°, -117.845023°
38	2,978.3	0.23	PROPRIETARY BIOFILTRATION	--	84.4		33.915748°, -117.845071°
39	5,894.1	0.45	PROPRIETARY BIOFILTRATION	--	167.0		33.915290°, -117.845078°
40	3,311.5	0.25	PROPRIETARY BIOFILTRATION	--	93.9		33.915045°, -117.845026°
41	49,299.0	3.62	BASIN WITH PROPRIETARY BIOFILTRATION	--	1,341.3		33.910692°, -117.842110°
42	1,707.8	0.13	PROPRIETARY BIOFILTRATION	--	48.4		33.911667°, -117.843064°
43	1,166.3	0.09	PROPRIETARY BIOFILTRATION	--	33.1		33.910768°, -117.842439°

[1] Based on 1.5' ponding depth.
[2] Based on 0.0027 cfs (1.0 gpm) per sf of proprietary media for flow-based BMPs. This is the typical media flow rate for systems such as Filterra, Focal Point and Modular Wetland System (MWS) units.
[3] Based on 0.0007 cfs (0.26 gpm) per sf of proprietary media with 48 hour draw down. This is based on MWS units configured for volume-based treatment approach.
[4] Minimum footprint for each BMP will be provided in each DMA. Actual manufacturer / model or footprint to be determined.

LEGEND

- PROJECT LIMITS
- NAP — NOT A PART
- SUBDRAINAGE BOUNDARY (HYDROMODIFICATION AREAS)
- DRAINAGE MANAGEMENT AREA (DMA) BOUNDARY
- DMA / ACRE — DMA DESIGNATION AND ACRES
- DMA DESIGNATION AND ACRES
- DMA DESIGNATION AND ACRES
- PROJECT STORM DRAIN SYSTEM (PRIVATE)
- EXISTING/OFFSITE STORM DRAIN SYSTEM (PUBLIC)
- PROJECT CATCH BASIN WITH BMP (PRIVATE) S1 STORM DRAIN SYSTEM STENCILING/SIGNAGE
- PROJECT CATCH BASIN WITH BMPS (PRIVATE) S1 STORM DRAIN SYSTEM STENCILING/SIGNAGE BIO-7 PROPRIETARY BIOFILTRATION (BIOTREATMENT)
- EXISTING/OFFSITE CATCH BASIN (PUBLIC)
- WATER QUALITY DIVERSION STRUCTURE (PRIVATE) INCLUDES 2-YEAR STORM FOR WESTERN PROJECT AREA
- BIO-7 PROPRIETARY BIOFILTRATION (PRIVATE)
- BIO-7 BASIN WITH PROPRIETARY BIOFILTRATION MEDIA (PRIVATE)
- BIO-7 BASIN WITH PROPRIETARY BIOFILTRATION MEDIA (PRIVATE) ALSO FOR HYDROMODIFICATION CONTROL
- BIO-1 BIORETENTION WITH UNDERDRAIN (PRIVATE) ALSO FOR HYDROMODIFICATION CONTROL
- SUBSURFACE DETENTION FACILITY (PRIVATE) FOR WATER QUALITY AND HYDROMODIFICATION CONTROL
- DISCHARGE POINT

BIO-1 BIORETENTION WITH UNDERDRAIN & BIO-7 PROPRIETARY BIOTREATMENT (BASIN TYPE)
N.T.S.
TYPICAL SECTION DETAIL

0 625
Scale (Feet)

Source: Hunsaker & Associates Irvine, Inc. 2022

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Additionally, the project site receives run-on from upstream areas to the north. However, in the developed condition, stormwater run-on from areas to the north would be conveyed through the project site via a separate on-site storm drain line (not commingling with on-site runoff) prior to discharging to pre-existing downstream connections. Additionally, as stated in PPP HYD-3, as part of project design feature, the project applicant will construct two new inlets off-site on the City-owned property immediately to north. The off-site inlet locations are shown on Figure 5.10-7. Therefore, the off-site flows from the north would not flow more quickly to the downstream.

It should be noted that open Carbon Canyon Channel traverses the southeast drainage area, and the proposed drainage improvement would require replacing the on-site Carbon Canyon Channel with a covered, expanded RCB, allowing for building of internal streets in the project site, construction of the new intersection at Rose and Vesuvius Drive, and completion of Rose Drive according to the Master Plan of Arterial Highways (see PPP HYD-3). The Carbon Canyon Channel is within the jurisdiction of the Army Corps of Engineers, requiring a 408 permit. The modified Carbon Canyon Channel would be constructed to Corps of Engineer standards according to the 408 permit requirements.

As described above, under post-project conditions, runoff from each of the project's drainage areas would not exceed the pre-project conditions with adequately sized detention facilities that would reduce the runoff volumes. However, pursuant to the City's SDMP, the proposed project is required to provide downstream existing system capacities by preparing a Hydrology and Hydraulic (H&H) report. A final and approved H&H report, reviewed and approved by the City of Brea Public Works Department, will assess all proposed connections to the downstream system to demonstrate that downstream systems are not impacted by the proposed project. Because the downstream systems capacities have not been evaluated, this impact is considered potentially significant.

Hydrologic Conditions of Concern

As part of the PWQMP, hydrologic conditions of concern (HCOC) were identified, as specified in Section 2.3.3 of the Model WQMP. An HCOC is a combination of upland hydrologic conditions and stream biological and physical conditions that presents a condition of concern for physical and/or biological degradation of streams. In the North Orange County permit area, HCOCs are considered to exist if any streams downstream from the project are determined to be potentially susceptible to hydromodification impacts and either of the following conditions exists:

- Post-development runoff volume for the 2-year, 24-hour storm exceeds the pre-development volume by more than 5 percent, OR

- The time of concentration (Tc) of post-development runoff for the 2-yr, 24-hour storm event is less than the time of concentration of the pre-development condition by more than 5 percent.

The proposed project is potentially susceptible to hydromodification impacts because it would increase the amount of impervious area and increase runoff volume and rate. Based on the TGD for hydromodification susceptibility, only the project site west of Valencia Drive (west drainage area discharging to Loftus Channel) has potential for hydromodification impacts. As shown in Appendix J of the DEIR, Attachment C, Figure

XVI.3-1, "Susceptibility Analysis for San Gabriel River-Coyote Creek," and Figure XVI.3-3, "Susceptibility Analysis for Santa Ana River," the east and southeast drainage areas are not within the potential susceptibility areas of erosion, habitat, and physical structure susceptibility, thus do not have potential for hydromodification impact. A summary of the analysis for the west drainage area is shown in Table 5.10-6, *HCOC Analysis Summary (2-year event) for West Drainage Area*.

Table 5.10-6 HCOC Analysis Summary (2-year event) for West Drainage Area

Subdrainage Area	Existing Condition				Proposed Condition				Change Acres	Change Q_2 (cfs)	Change Tc (min)	Change V (ac-ft)
	Acres	Q_2 (cfs)	Tc (min)	V (ac-ft)	Acres	Q_2 (cfs)	Tc (min)	V (ac-ft)				
A	59.7	49.9	16.86	1.97	66.9	80.80	13.99	8.12	+7.2	+30.9	-2.87	+6.15
B	20.7	20.4	13.44	0.76	16.2	18.2	13.16	1.69	-4.5	-2.2	-0.28	+0.93
C	16	13.5	16.78	0.55	10.50	15.2	8.73	1.40	-5.5	+1.7	-8.05	+0.85
Total	**96.4**	**83.8**	**--**	**3.28**	**93.6**	**114.4**	**--**	**11.21**	**-2.8**	**+30.4**	**--**	**+7.93**

Source: Hunsaker 2022a.
Note: Discrepancy in proposed condition drainage acres results from edge grading effects and on-site routing of storm drain.

To address the project's HCOC, surface and subsurface detention facilities are proposed on the western project site to detain the volume required to mitigate the difference between the project's pre- and post-development peak runoff, and change in time of concentration at each of the project's points of compliance (outlet) to the existing downstream, drainage system. With implementation of the detention facilities, the project's hydromodification impacts (as well as impacts from larger storm events) will be minimized in the developed condition.

The proposed project would also integrate, where feasible, hydrologic source control (HSC) measures such as impervious area dispersion (HSC-2) and street trees (HSC-3) to reduce runoff volume for a given drainage area without reducing the site's true impervious area. Impervious area dispersion refers to a practice where runoff from the project's roof and walkway areas will be directed to adjacent landscaped areas for filtration, evapotranspiration, and incidental infiltration of runoff and volume reduction before discharging to the storm drain system. Also, street trees would be planted along the project's parkways and in common lot areas to intercept rainfall and provide some volume reduction benefits for the project.

To address runoff from proposed improvements to Lambert Road and Valencia Avenue/Rose Drive, the project anticipates implementing BMPs prescribed in the EPA's "Green Streets" guidance manual and consistent with the "maximum extent practicable" standard from the TGD. Anticipated BMPs include the use of LID BMPs (swales, planters, bioretention, proprietary facilities) and structural BMPs (pervious pavement).

Therefore, with implementation of the detention facilities in accordance with the LID performance criteria and various BMPs, the proposed project's hydromodification impacts would be minimized in the developed condition to a less than significant level.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.10-5: The proposed project would not impede or redirect flood flows. [Threshold HYD-3.iv]

According to FEMA's Flood Insurance Rate Maps, the project site is not within the 100-year flood hazard zone (FIRM ID#06059C0061J and #06059C0062J) (FEMA 2009). The project site is identified as Zone X, an area of minimal flood hazard. Therefore, implementation of the proposed project would not impede or redirect flood flows.

However, the project site east of Rose Drive is adjacent to the Carbon Canyon Dam and within the dam's inundation area (see Figure 5.10-8, *Flood Hazard Area*). Carbon Canyon Dam encompasses over 221 acres and has a capacity of 7,033 acre-feet of water. The Orange County Flood Control District maintains a series of flood-retarding basins along the Carbon Creek Channel downstream of Carbon Canyon Dam. These basins are used to slow flood flows into the urbanized area downstream of the dam. Carbon Canyon Dam is vital for the flood protection of portions of the coastal plains in Orange County, including the cities of Fullerton, Placentia, and Anaheim. The U.S. Army Corps of Engineers is responsible for the dam's safety and conducts inspections on a regular basis. Dam failure inundation maps are reviewed and approved by the California Office of Emergency Services. The potential inundation zone is a "worst-case scenario" that assumes instantaneous dam failure with the reservoir filled to capacity. However, dams rarely fail instantaneously, and reservoirs are not filled to capacity at all times. Dam failure inundation zones are not FEMA-regulated flood zones, and a property's location in a dam failure inundation zone does not itself trigger the FEMA flood insurance requirement. California law requires disclosure to a prospective buyer of the fact that any portion of a sale property is within a mapped dam failure inundation zone (even during a drought when the reservoir is empty). In the event of the Carbon Canyon Dam failure, the proposed project could expose occupants of Brea 265 Specific Plan east of Rose Drive to risk of flooding.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.10-6: The proposed project would not cause the release of pollutants due to project inundation from being in the flood hazard, tsunami, or seiche zones. [Threshold HYD-4]

As described in Impact 5.10-5, the project site is not within the 100-year flood hazard zone but is within the flood hazard zone for the Carbon Canyon Dam. A seiche is an oscillating surface wave generated by ground motion in a restricted or enclosed body of water, usually during an earthquake. Seiches are of concern for water storage facilities, because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. Although there is no identified seiche zone, the project site is adjacent to the Carbon Canyon Dam, which could create flooding impacts from a seiche. The project site could be inundated, which could result in release of pollutants as described in Impact 5.10-1. However, the project site is currently used for oil production and agricultural purposes, which could also result in release of pollutants related to those uses if the project site were to be inundated. Therefore, potential impacts from pollutants would not be greater under the proposed project, and impacts would be considered less than significant.

A tsunami is earthquake-induced flooding that is created from a large displacement of the ocean floor. The site is approximately 19 miles northeast of the Pacific Ocean and is not in a tsunami inundation area. A less than significant tsunami impact is anticipated.

Level of Significance Before Mitigation: Less than significant impact.

5.10.5 Cumulative Impacts

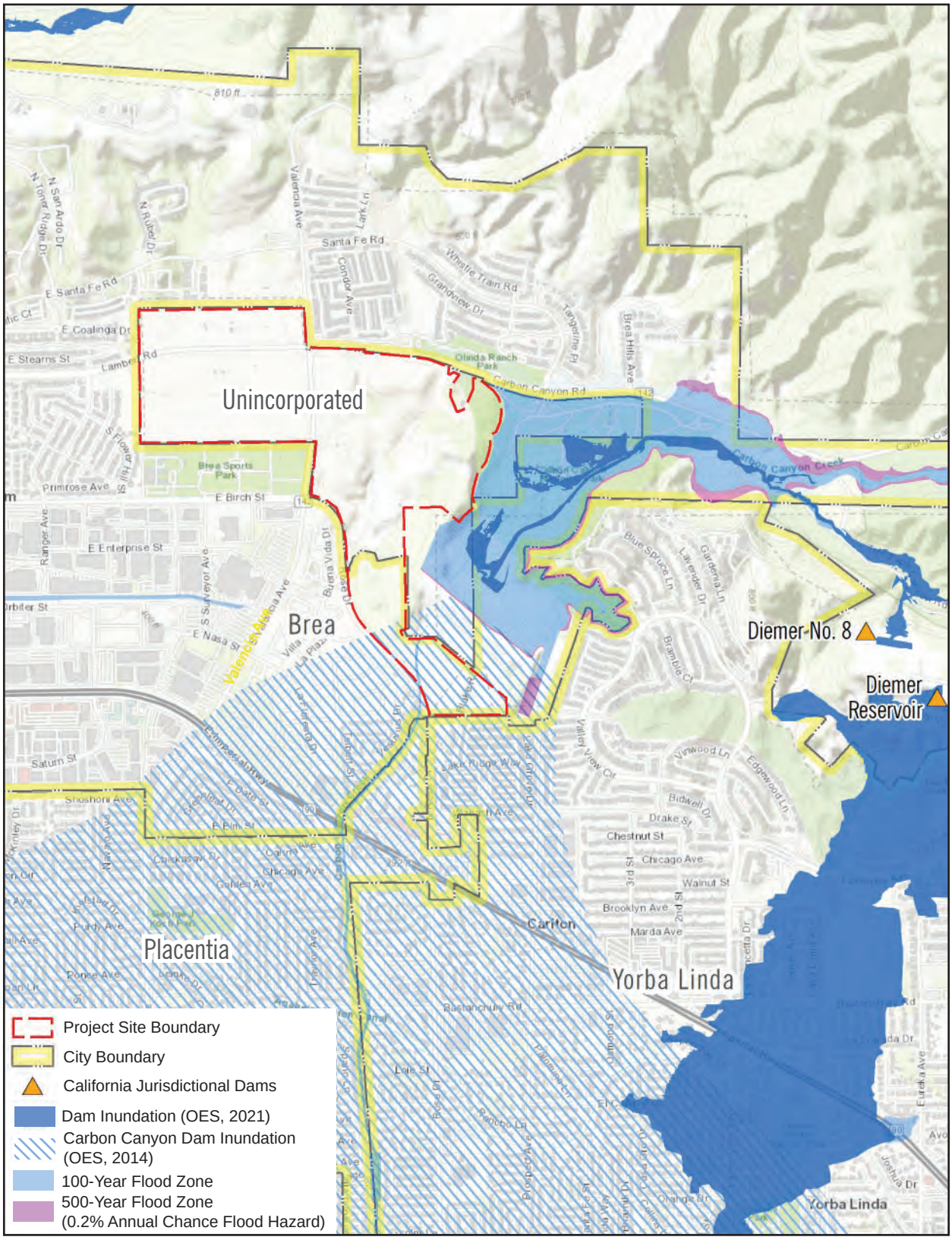
Water Quality

The cumulative study area for water quality is the part of Orange County in the jurisdiction of the Santa Ana RWQCB. Other projects could result in a cumulatively considerable impact to water quality due to construction activities and increases in post-development runoff. All construction projects that involve the disturbance of one or more acres of land are subject to the NPDES Construction Permit requirements for implementation of individual SWPPPs, which outline BMPs for erosion control, sediment control, wind erosion control, tracking control, nonstorm water management and waste management, and materials pollution control. Additionally, new development and significant redevelopment projects are required to prepare and implement WQMPs for long-term implementation and maintenance of source-control, site-design, and treatment-control BMPs to ensure compliance with water quality goals and with the City's NPDES ordinance. Thus, pollutants generated in the project site and cumulative projects in the Santa Ana River Basin would be mitigated during construction activities and project operation. Compliance with the Santa Ana RWQCB's waste discharge requirements and/or water quality certifications would also prevent long-term stormwater quality impacts. No significant cumulative impact would occur.

Drainage

The geographic area considered for cumulative analysis is the San Gabriel River–Coyote Creek Watershed and the Santa Ana River Watershed, where the proposed project would drain. Other projects could potentially increase the amount of impervious area in the watersheds, potentially increasing runoff and drainage volumes. However, as with the proposed project, other projects would be required to implement site design, LID, and treatment control BMPs pursuant to MS4 permits of the relevant RWQCB to ensure that postproject runoff volumes do not exceed the preproject conditions. As with the proposed project, cumulative projects are required to implement BMPs identified in the individual WQMP to reduce runoff volumes and rates on development sites. Examples of the BMPs are hydrologic source controls (impervious area dispersion and street trees), infiltration, stormwater harvest and reuse, bioretention, biofiltration, biotreatment, and detention basins. Cumulative projects must also meet the City's SDMP requirements and prepare and implement an H&H report to ensure capacities of the downstream drainage systems. Jurisdictions in the watersheds regulate development within 100-year flood zones to minimize hazards to public safety and alterations of flood flows. With regard to the existing storm drain system, compliance with local, state, and federal regulations to minimize stormwater runoff from individual projects would ensure that adequate storm drain infrastructure is constructed to serve existing and future developments. Cumulative impacts to surface water, drainage, and flood hazards would be less than significant, and project impacts would not be cumulatively considerable.

Figure 5.10-8 - Flood Hazard Area
5. Environmental Analysis



Source: FEMA, 2021; DRW, 2021

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Flood

One other project in the cumulative project list (i.e., La Floresta) is in the direct inundation pathway of Carbon Canyon Dam. As with the proposed project, it is anticipated that an emergency response plan would be prepared for the La Floresta project to ensure that adequate emergency response protocols are established. Development of the proposed project, combined with the cumulative projects, would not redirect flood paths to increase flood hazards, and with mitigation, would not be cumulatively significant.

5.10.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.10-1, 5.10-2, 5.10-3, and 5.10-6.

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.10-4** The proposed project could result in inadequate capacities at downstream drainage facilities.
- **Impact 5.10-5** The proposed project could redirect flood flow from the Carbon Canyon Dam.

5.10.7 Mitigation Measures

Impact 5.10-4

HYD-1 Prior to approval of a final site improvement plans, the project applicant shall prepare a Final Hydrology and Hydraulic (H&H) report in compliance with the City of Brea's Master Plan of Drainage 2013 requirements for review and approval by the City of Brea Public Works Department. The H&H report shall address and assess all proposed connections to the downstream system, and appropriate mitigation measures shall be submitted to the City of Brea so that the downstream systems are not impacted.

Impact 5.10-5

HYD-2 Prior to recordation of any final subdivision map for areas below the Carbon Canyon Dam, the project applicant shall submit an emergency response plan (Plan) that meets the approval of the Brea Fire Department. The Plan shall provide emergency response protocols, and for the final subdivision map east of Rose Drive within the Carbon Canyon Dam inundation area, the Plan shall also demonstrate compliance with the dam failure inundation buyer notification provisions of state law.

5.10.8 Level of Significance After Mitigation

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

5.10.9 References

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5.11 LAND USE AND PLANNING

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts to land use in the City of Brea from implementation of the proposed Brea 265 Specific Plan. Land use impacts can be either direct or indirect. Direct impacts are those that result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services or increased traffic on roadways. Indirect impacts are addressed in other sections of this DEIR.

5.11.1 Environmental Setting

5.11.1.1 REGULATORY BACKGROUND

Regional Regulations

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 (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and 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. As the southern California region's MPO, SCAG cooperates with the South Coast Air Quality Management District, the California Department of Transportation, and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives. The plans most applicable to the proposed project are discussed below.

Regional Transportation Plan/Sustainable Communities Strategy

The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), "Connect SoCal," was adopted in September 2020. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the member counties. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. It builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for residents of southern Californians. Connect SoCal outlines over 4,000 transportation projects through 2045—highway improvements, railroad grade separations, bicycle lanes, new transit hubs, replacement bridges, etc. In addition, Connect SoCal is supported by a combination of transportation and land use strategies that outline how the region can achieve California's greenhouse gas emission reduction goals and federal Clean Air Act

requirements. The plan also strives to achieve broader regional objectives, such as the preservation of natural lands, improvement of public health, increased roadway safety, support for the region's vital goods movement industries, and more efficient use of resources.

Local Regulations

Approximately 219.1 acres of the project site are within unincorporated Orange County in the City of Brea's sphere of influence. Approximately 43 acres of the project site is in the City of Brea.

Orange County General Plan

The unincorporated portion of the project site has the land use designations: 1B (Suburban Residential), 4 (Public Facilities), and 5 (Open Space) (Orange County 2015). Suburban Residential allows for a wide range of housing types, up to 0.5 to 18.0 dwelling units per acre, and 1 to 47 persons per acre. Public Facilities allows for major facilities built and maintained for public use and allows for a range of intensity and density, depending on the use. The Open Space land use designation provides for limited land uses that do not require a commitment of significant urban infrastructure. The General Plan states that

> Open Space (5) areas are not necessarily committed to permanent open space uses. Certain property within the Open Space categories is committed, through public or private ownership, to remain as open space, but other property, due to market pressures to serve a growing County population may ultimately be developed in other ways. (Brea 2003, p. III-21).

Within the Open Space designation, buildings and structures should not exceed 20 percent of site coverage. The Open Space designation allows for approximately 9 employees per acre.

Orange County Code

The unincorporated portion of the project site is currently zoned A1(O), General Agriculture, with an oil production overlay (Orange County 2016). The General Agriculture zone allows for principal permitted uses including agriculture, community care facilities, parks/playgrounds/athletic fields, and single-family dwellings or mobile homes. Other uses are permitted with a site development permit and use permit. The oil production overlay zone permits oil drilling and production of oil, gas, and other hydrocarbon substances.

The southern portion of the project site adjacent to the Carbon Canyon Dam is in a FP-2 (Flood Plain 2) overlay zone. Pursuant to Orange County Code section 7-9-113.3(a)(2), the FP-2 applies to areas shown as "A," "A1" through "A30," "AO," "AE," "AH," "A99," and "M" on the December 3, 2009, or most current federal Flood Insurance Rate Maps (FIRMs) and Flood Hazard Boundary Maps (FHBMs) and to areas that the County has determined to be a special flood hazard area. Section 7-9-113 identifies permitted uses and regulations for floodplain areas.

City of Brea General Plan

The State of California mandates that every city adopt a comprehensive long-range plan that guides physical development and regulates land use. The City of Brea General Plan addresses the City's vision for and growth into the future. The General Plan guides future decision making about development, resource management,

public safety, and community well-being. The General Plan addresses lands within the City and within its sphere of influence.

Existing City of Brea General Plan Designations

The eastern and western sides of the project site currently have a General Plan land use designation of Hillside Residential and Low Density Residential, respectively (see Figure 3-7, *Existing and Proposed General Plan Land Use Map*). The eastern side of the project site contains land within the City and unincorporated Orange County. The western side of the project site contains land in the City's sphere of influence.

The Hillside Residential land use designation allows for permitted uses, including detached single-family residences and ancillary uses, limited commercial recreational uses with discretionary review, places for religious worship (with discretionary review), public schools, group homes, and public and private hiking trails and related facilities. Permitted dwelling unit densities are calculated based on a three-step approach (described in Brea's General Plan p. 2-19), which includes determining averages slope, constraints and opportunities, and conformance to performance criteria.

The Low Density Residential land use designation permits low-density single-family dwellings and accessory buildings. Permitted dwelling unit density is between 1 to 6 dwelling units per acre and population density is approximately 16 persons per acre.

Goals and Policies

Four overarching goals guide Brea's General Plan:

- **Goal 1:** Create an inclusive community that strives to meet the needs of residents of all ages, income levels, occupations, family types, and lifestyles.
- **Goal 2:** Plan for the sustainable stewardship of natural resources.
- **Goal 3:** Provide a range of mobility options that reduce dependence on the automobile.
- **Goal 4:** Maintain a sustainable economic base to provide a solid fiscal foundation and diverse employment opportunities, and to ensure the provision of quality community facilities and services.

To implement these goals, the General Plan has five chapters, or elements: Community Development, Housing, Community Resources, Community Services, and Public Safety. These elements conform to the state's mandated elements. The Community Development and Housing elements closely relate to land use and are discussed in this chapter.

Community Development Element

The land use section of the Community Development Element defines the distribution of land uses and the intensity of development. It provides goals and policies that are used to guide implementation of land use objectives that provide for the present and future population.

- **Policy CD-1.1.** Create neighborhoods that effectively integrate single-family and multi-family housing with convenience and neighborhood shopping centers, park and recreation areas, and other uses appropriate for the neighborhoods
- **Policy CD-1.2.** Maintain a land use structure that balances the provision of jobs and housing with available infrastructure and public and human services.
- **Policy CD-1.4.** Ensure that the City maintains a balance among residential, commercial, and industrial land uses.
- **Policy CD-1.5.** Provide opportunities for development of housing that responds to diverse community needs in terms of density, size, location, design, and cost.
- **Policy CD-1.9.** Encourage new development that is organized around compact, walkable, mixed-use neighborhoods and districts to conserve open space resources, minimize infrastructure costs, and reduce reliance on the automobile.
- **Policy CD-1.10.** Preserve open space wherever possible, especially in hillside areas.
- **Policy CD-1.15.** Strongly encourage the master planning of any large contiguous land holdings.
- **Policy CD-1.15 [sic].** Strongly encourage the prezoning and annexation of unincorporated properties in the City of Brea in order to avoid the creation of new County islands.
- **Policy CD-4.2.** Improve transportation, pedestrian, and visual connections between Brea Downtown and the rest of the community.
- **Policy CD-9.1**. Ensure that new commercial uses complement rather than compete with businesses along Imperial Highway and in Downtown.
- **Policy CD-9.2.** Accommodate emerging housing trends, and encourage pedestrian linkage to surrounding neighborhoods and activity centers.
- **Policy CD-9.3.** Encourage the establishment of community recreation and park facilities in the area.
- **Policy CD-9.4.** Support efforts to establish quality, community institutions in the area.
- **Policy CD-9.5.** Provide quality, affordable housing that would accommodate young families, college students, and educators.
- **Policy CD-9.6.** Preserve open space within this area, and provide outdoor recreation facilities.
- **Policy CD-9.7.** Strongly encourage the master planning of any large contiguous land holdings in this area.

- **Policy CD-9.8.** Strongly encourage the prezoning and annexation of the unincorporated properties in this area into the City the Brea in order to avoid the creation of new County islands.

Housing Element

The Housing Element identifies strategies and programs that focus on the conservation and improvement of existing affordable housing; the provisions of adequate housing sites; assistance in the development of affordable housing; removal of governmental and other constraints to housing development; promotion of equal hosing opportunities; and promotion of sustainability and energy efficiency.

- **Policy 2.1. Financial Resources** – Pursue expanded financial resources to support in the production of housing affordable to Brea's workforce, disadvantaged communities, and special needs populations.

- **Policy 2.2. Mixed Income Housing** – Utilize the City's Inclusionary Housing Ordinance as a tool to integrate affordable units within market rate developments, or pay an in-lieu fee to support the provision of affordable housing.

- **Policy 2.3. Provide Homeownership Assistance** – Encourage the provision of financial assistance to low and moderate first-time homebuyers through County and State programs.

- **Policy 2.4. Housing for Workforce** – Promote the City's Affordable Housing Programs with employers in Brea.

- **Policy 2.5. Public/Private Partnerships** – Explore collaborative partnerships with major employers, educational institutions, non-profit organizations, and others in the provision of affordable, workforce and special needs housing.

- **Policy 3.6. Hillside Development** – Base densities in Brea's hillsides on the ability of infrastructure, ingress and egress for evacuations, landform, physical constraints, and emergency response capabilities to support development.

- **Policy 3.7. Annexations** – Pursue phased annexation of Brea's Sphere of Influence to provide additional growth opportunities for a range of housing types consistent with infrastructure capacities.

- **Policy 6.5. Transportation Alternatives and Walkability** – Incorporate transit and other transportation alternatives including walking and bicycling into the design of new development, particularly in areas within a half-mile of designated transit stops and the City's "Tracks at Brea" walking and biking trail system.

- **Policy 6.6. Jobs/Housing Balance** – Encourage a closer link between housing and jobs in the community, including housing opportunities affordable to Brea's modest income workforce.

City of Brea Municipal Code

The City of Brea Zoning Ordinance, Title 20 of the Brea Municipal Code, is designed to encourage the most appropriate use of land and to facilitate adequate provision for community facilities and utilities. Section

20.04.010 of the municipal code establishes zones for allowable uses. Zoning designations are identified for areas in the city and its sphere of influence. The eastern portion of the project site is currently zoned HR, Hillside Residential, and the western portion of the portion of the project site is currently zoned R-1, Single-Family Residential (see Figure 3-8, *Existing and Proposed Zoning*). These designations apply to the portions of the project site in Brea and the sphere of influence.

Chapter 20.206, HR Hillside Residential Zone, indicates that the purpose of the HR zone is to achieve the City's objective to facilitate and permit the orderly development of property within the hillside areas through a set of hillside development standards aimed at protecting the public health, safety, and welfare; protecting and preserving natural and biological resources for the long-term benefit of the Brea community and the broader community; recognizing the inherent value in the properties subject to this chapter; allowing size, type, location, density, and intensity of development based on available infrastructure, the geographic steepness of terrain, presence of unique geographic conditions and constraints, and presence of environmentally sensitive areas; and optimizing the use of sensitive site design, grading, landscape architecture, and architecture, all to achieve the City's objectives.

Chapter 20.208, R-1 Single Family Residential Zone, indicates that the purpose of the R-1 zone is to provide an environment conducive to the development of single-family homes with no mixed or incompatible uses.

5.11.1.2 EXISTING CONDITIONS

The project site is south of Carbon Canyon Road, north and south of Lamber Road, east and west of Valencia Avenue, east of Rose Drive, and west of Carbon Canyon Regional Park. The Specific Plan area is bisected by Valencia Avenue, which runs north-south, and by Lambert Road, which runs east-west. The project site is an active oil operations site operated by Aera Energy, except for the southern agricultural area and the northwestern portion that operates as a nursery. There is no public access to the project site.

The project site has been used for oil production continuously since the early 1900s. Of the approximately 190 wells drilled on the site, 68 remain in operation and produce approximately 400 barrels per day. The 167.6 acres east of Valencia Avenue slope down from northeast to southwest, with more than 150 feet of elevation change. The 94.5 acres west of Valencia Avenue slope from north to south, with an average slope of about 3 percent. Most of the Specific Plan area is considered flat because it falls into the 0 to 10 percent slope range, with elevations gradually increasing in the northeastern portions of the site. A hilltop in the northeastern portion of the project site provides views of surrounding terrain.

5.11.2 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:

LU-1 Physically divide an established community.

LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

5.11.3 Plans, Programs, and Policies

There are no existing plans, programs, and policies applicable to the proposed project.

5.11.4 Environmental Impacts

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-1: Project implementation would not divide an established community. [Threshold LU-1]

The project site is being used for oil production, agricultural, and nursery uses, and Valencia Avenue and Lambert Road also run across the project site, separating the project site into east and west areas. There is no established community within the project site, and various land uses surround the project site, such as residential, school, open space, industrial, and vacant lots. Therefore, the proposed project would not physically divide an established community, and no impact is anticipated.

Level of Significance Before Mitigation: No impact.

Impact 5.11-2: Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect. [Threshold LU-2]

This section discusses the proposed project's consistency with applicable regional and local plans that are adopted for the purpose of avoiding or mitigating an environment effect.

2020–2045 RTP/SCS: Connect SoCal

Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The proposed project would develop a residential community that integrates bicycle paths, sidewalks, and trails within the site that would connect to existing pedestrian facilities in the surrounding community, thereby promote connectivity and walkability in a community that needs more housing. Table 5.11-1 evaluates the proposed project's consistency with applicable RTP/SCS goals.

Table 5.11-1 SCAG's Connect SoCal Consistency Analysis

Goals	Consistency Analysis
▪ **RTP/SCS G1:** Encourage regional economic prosperity and global competitiveness.	***Consistent***. As discussed in the DEIR Section 5.14, *Population and Housing*, the proposed project would improve the existing jobs and housing imbalance from 2.98 (2020) without project condition to 2.80 with project condition. Recommended jobs-housing ratio is between 1.3 and 1.7, and Brea is a jobs-rich community needing more housing development. The RHNA allocation for the City for 2021-2029 housing-element cycle is 2,365 units. Development of 1,100 dwelling units would contribute to improving the job-housing balance in Brea and the region's housing shortage. Its diverse housing options, including affordable housing, is important to the economic prosperity of the city and region. Therefore, 1,100 units, including 76 affordable units, would contribute to attracting skilled workers and encouraging regional economic development and competitiveness.

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Table 5.11-1 SCAG's Connect SoCal Consistency Analysis

Goals	Consistency Analysis
▪ **RTP/SCS G2:** Improve mobility, accessibility, reliability, and travel safety for people and goods.	***Consistent.*** The proposed project includes travel lane improvements and pedestrian improvements within and around the project site. The proposed project would improve Carbon Canyon Road/Lambert Road, Valencia Avenue, and Rose Drive. The south side of Carbon Canyon Road would be improved to Major Highway Standard with three travel lanes; Lambert Road would be improved to Major Arterial Highway Standards with three travel lanes in each direction; and the east side of Rose Drive would be improved to Primary Highway with two travel lanes (instead of one). In addition, the proposed project includes pedestrian and bicycle improvements along roadways bordering the project site. The proposed project would develop bikeways and trails that would connect to existing bikeways and trails surrounding the project site. All roadway improvements and pedestrian facilities would be designed to meet applicable standards. Although the proposed project would increase trips generated in the project site, the proposed project would improve the jobs-housing balance in a jobs-rich city by providing housing and roadway improvements that meet the General Plan roadway designations. The roadway improvements would help maximize mobility, accessibility, reliability, and travel safety for all people and goods.
▪ **RTP/SCS G3:** Enhance the preservation, security, and resilience of the regional transportation system.	***Not Applicable.*** As discussed in RTP/SCS G2, the proposed project includes roadway improvements that meet the designated roadway classifications and design standards of the City's Circulation Element. However, the proposed project is not a transportation project that could enhance the preservation, security, and resilience of the regional transportation system. This goal is not applicable.
▪ **RTP/SCS G4:** Increase person and goods movement and travel choices within the transportation system.	***Consistent:*** See RTP/SCS G2.
▪ **RTP/SCS G5*:*** Reduce greenhouse gas emissions and improve air quality.	***Inconsistent.*** Long-term emissions generated by the proposed project would not produce criteria air pollutants that exceed the South Coast AQMD's significance thresholds for project operations with mitigation, except for long-term VOC emissions that would exceed the threshold even with mitigation. The proposed project would also exceed South Coast AQMD's threshold for GHG emissions even with mitigation. The proposed project's construction impact would be reduced to a less than significant level with implementation of mitigation measures described in Section 5.3, *Air Quality*. Although the proposed project would provide needed housing development in a jobs-rich city and would help fulfill the City's RHNA allocation, the proposed project would not reduce GHG emissions and improve air quality. The proposed project is inconsistent with this goal.
▪ **RTP/SCS G6:** Support healthy and equitable communities.	***Consistent:*** The proposed project includes a 13-acre sports park immediately north of the existing Brea Sports Park with various amenities such as a baseball field, tennis courts, soccer field, pickleball courts, a full basketball court, tartan track with fitness stations, innovative play area, shade structure, concession stand (approx. 900 square feet), restrooms with drinking fountain and bike racks, team warmup field, and parking. A 2.1-acre Staging Area park would allow residents to access neighboring Carbon Canyon Regional Park and Chino Hills State Park as well as other areas of the community through multiple routes. These recreation opportunities would be open to public, not just the residents of the Specific Plan. The proposed project also includes pedestrian and bicycle improvements along roadways bordering the project site. The proposed system of bikeways, trails, and sidewalks would link neighborhoods to key amenities and open space areas in the project site and connect to existing bikeways and trails surrounding the project site, including Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park. The proposed project would also connect to The Tracks at Brea Trail, linking the project site to the Town Center, employment center, Birch Hills Golf Course, and Downtown Brea. The provision of these various recreational and open space opportunities is consistent with the goal of supporting healthy and equitable communities.

Table 5.11-1 SCAG's Connect SoCal Consistency Analysis

Goals	Consistency Analysis
▪ **RTP/SCS G7:** Adapt to a changing climate and support an integrated regional development pattern and transportation network.	***Consistent:*** The proposed project includes roadway, bikeways, and pedestrian improvements that connect to the existing roadways, bikeways, and trails surrounding the project site; therefore, the proposed project would integrate into the existing transportation network. There are existing commercial, office, educational, and recreational uses that surround the project site, and development of the proposed project would place needed housing products in close proximity to existing nonresidential development so that VMT for the project can be minimized. As discussed in Section 5.17, *Transportation*, project-generated VMT per service population would be lower than Brea's VMT per service population for the corresponding traffic analysis zones.
▪ **RTP/SCS G8:** Leveraging new transportation technologies and data-driven solutions that result in more efficient travel.	***Consistent:*** The proposed roadway improvements, including new signalized intersections and modified existing signalized intersections, would be provided based on the Manual on Uniform Traffic Control Devices and incorporate transportation technologies and data-driven solutions to achieve more efficient travel.
▪ **RTP/SCS G9:** Encourage development of diverse housing types in areas that are supported by multiple transportation options.	***Consistent.*** The proposed project would provide up to 450 low-density units and 650 medium-density units—a total of 1,100 units with an overall average density of 4.2 dwelling units per acre. The total of 1,100 units would also include 76 affordable housing units. The proposed project also provides multiple transportation options by providing roadways, sidewalks, bikeways, and trails on site. The on-site mobility systems would connect to existing pedestrian, bicycle, and trail networks across the city and open the project site to public access. The proposed project includes pedestrian and bicycle improvements, including bikeways and trails along Carbon Canyon Road, Lambert Road, Rose Drive, and Valencia Avenue. Therefore, the project site supports multiple transportation options, and development of 1,100 housing units would add to the city's housing stock, diversifying the housing types in the city.
▪ **RTP/SCS G10:** Promote conservation of natural and agricultural lands and restoration of habitats.	***Consistent:*** The project site contains agricultural fields and operations and 4.61 acres of nursery. The remaining areas consist of various biological resources habitats such as coastal sage scrub habitat, chaparral habitat, etc. The project site also contains a total of 39.65 acres of special status farmland, as discussed in Section 5.2, *Agriculture and Forestry Resources*. However, the project site is currently zoned R-1 Single-Family Residential and HR Hillside Residential, and although the proposed project would remove the existing biological habitats and impact sensitive plants and wildlife species, adequate mitigation measures have been provided, as discussed in Section 5.4, *Biological Resource*s, to reduce potential impacts to less than significant level. The mitigation measure includes providing 70.65 acres of open space land for preservation adjacent to Chino Hills State Park. Therefore, the proposed project would promote restoration of habitats.

Source: SCAG 2020.

City of Brea General Plan

A detailed analysis of the proposed project's consistency with the applicable goals and policies of the City's General Plan is provided in Table 5.11-2, *Consistency with General Plan Goals and Policies*. In accordance with the holding in *Sierra Club v. County of Napa*, 121 Cal. App.4th 1490 (2004),

> ... [a] project is consistent with a county's general plan (and any specific plan adopted to further the objectives of the general plan) "if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment." [Endangered Habitats League, Inc. v. County of Orange (2005) 131 Cal. App.4th 77, 782.] A given project need not be in perfect conformity with each and every general plan policy. To be consistent, a [project] must be 'compatible with' the objectives, policies, general land uses and programs specified in the general plan.

5. Environmental Analysis
LAND USE AND PLANNING

Therefore, consistent with the holding in *Sierra Club v. County of Napa*, Table 5.11-2 analyzes why the proposed project is consistent (i.e., "compatible") or inconsistent with the City of Brea General Plan, and how it would help implement and further various goals and policies of the General Plan.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
Overarching General Plan Goals	
GOAL 1: Create an inclusive community that strives to meet the needs of residents of all ages, income levels, occupations, family types, and lifestyles.	***Consistent***. The Brea 265 Specific Plan would contribute to creating an inclusive community with varying housing types, providing up to 450 low-density units and 650 medium-density units (including 76 affordable housing units) with an overall average density of 4.2 dwelling units per acre as well as park/ recreational area and open space. The proposed project includes a 13-acre sports park with various amenities and a 2.1-acre Staging Area park that would be open to public to meet the needs of residents of all ages., income levels, occupations, family types, and lifestyles. Further, the proposed project would create a walkable community with open space and recreational opportunities that would connect to publicly accessible trails, parks, and open space. The proposed project's varying housing types, recreation/open space, and active connectivity would support an inclusive community environment.
GOAL 2: Plan for the sustainable stewardship of natural resources.	***Consistent***. The Brea 265 Specific Plan incorporates a sustainable community design and development, including compact development, reduced impervious surfaces, improved water detention and conservation, and improved active transportation amenities that would conserve energy and water and preserve open space. Approximately 23 percent of the project site would be reserved for open space and parks/recreational space—47.5 acres of open space and 15.1 acres of parks/recreational space. Additionally, as part of mitigation for biological resources, the project applicant would be required to provide a minimum of 52.86 acres of open space offsite within or adjacent to the Chino Hills State Park.
GOAL 3: Provide a range of mobility options that reduce dependence on the automobile.	***Consistent***. The Brea 265 Specific Plan promotes active transportation (such as walking and bicycling) by incorporating sidewalks, trails, and landscaped parkways between the project site's land uses that also provide access to public and common use areas. These pathways would further connect to the greater Brea community and nearby parks, including Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park. The proposed project also incorporates public right-of-way improvements, such as bicycle lanes and trails along Carbon Canyon Road, Lambert Road, Valencia Avenue, and Rose Drive that would promote active forms of transportation and connect to existing bikeways and pedestrian paths. Development of the Brea 265 Specific Plan would further place residents within walking distance to public parks and recreational facilities, commercial and office opportunities, and the Olinda Elementary School.
GOAL 4: Maintain a sustainable economic base to provide a solid fiscal foundation and diverse employment opportunities, and to ensure the provision of quality community facilities and services.	***Consistent***. The proposed project would contribute to a sustainable economic base by providing short-term construction jobs during the buildout of the Brea 265 Specific Plan and by providing housing for employees that work in the area.
Community Development Element	
GOAL CD-1: Provide a balance of land uses to meet the present and future needs of all residents.	***Consistent:*** The Brea 265 Specific Plan would provide 1,100 housing units in an area previously used for oil production. The housing units would consist of single-family homes, detached cluster homes, townhomes, and apartments, including affordable housing units, to meet the diverse need of the community. The Specific Plan would also integrate a comprehensive walking and biking trail system that provides physical and visual connections to enhance walkability, linking neighborhoods to key amenities and open space areas within Brea 265 and to the

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
	existing trails in the greater Brea community and nearby Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park. As discussed in DEIR Section 5.14, *Population and Housing*, the proposed project is part of the planned growth for the city, would improve the existing jobs and housing balance from 2.98 under the existing condition (2020) to 2.80 with existing plus project condition. SCAG forecasts that the City's jobs-housing ratio would be 3.05 in 2045, improving from 3.14 in 2016. The recommended jobs-housing ratio is between 1.3 and 1.7, and Brea is now and is projected to be jobs-rich, needing more housing development. Provision of additional housing would promote balanced land uses in the city. The proposed project would also include a 13-acre park adjacent to the existing Brea Sports Park with various amenities, meeting recreational needs of Brea residents. Although no commercial uses are included in the proposed project, it places residences approximately 0.55 mile north of the Village at La Floresta, a commercial retail center. Provision of a diverse supply of housing in the city would also support preservation of employment centers and businesses, thereby contributing to providing a balance of land uses in the city.
▪ **Policy CD-1.1.** Create neighborhoods that effectively integrate single-family and multi-family housing with convenience and neighborhood shopping centers, park and recreation areas, and other uses appropriate for the neighborhoods.	***Consistent.*** The Brea 265 Specific Plan would create an integrated community of 1,100 dwelling units that would consist of single-family detached homes, detached cluster homes, townhomes, attached motorcourt homes, and multifamily units. Pedestrian walking paths, bicycle paths, and trails with a system of open space, sports park, and recreational amenities would link various neighborhoods in the Specific Plan. These bicycle paths and trails would provide strong connections within the Specific Plan and to the greater Brea community, such as Chino Hills State Park, Carbon Canyon Regional Park, Olinda Elementary School, Brea Sports Park, Downtown Brea, and employment centers.
▪ **Policy CD-1.2.** Maintain a land use structure that balances the provision of jobs and housing with available infrastructure and public and human services.	***Consistent.*** As discussed under Goal CD-1, Brea is now and is projected to be jobs-rich, needing more housing development. The buildout of the Specific Plan would include 1,100 dwelling units of low- and medium-density residential units with a target density of 4.2 dwelling units per acre. Development of housing units in a jobs-rich community would contribute to the balance of jobs and housing with adequate infrastructure and services. As discussed in Section 5.15, *Public Services*, the proposed project would result in a less than significant impact to public services with mitigation. As discussed in Section 5.19, *Utilities and Services Systems*, the proposed project would result in a less than significant impact to utilities with mitigation. Therefore, the proposed project would not exacerbate existing deficits in infrastructure and human services and would help maintain a balance of jobs and housing with infrastructure and public and human services.
▪ **Policy CD-1.3.** Endeavor to create a mixture of employment opportunities for all economic levels of citizens.	***Consistent.*** The proposed project would create construction jobs, creating employment opportunities for all economic levels of citizens. As discussed under Goal CD-1, Brea is now and is projected to be jobs-rich, needing more housing development. The buildout of the Specific Plan would include 1,100 dwelling units of low- and medium-density residential units, with a target density of 4.2 dwelling units per acre. The proposed project could provide housing for employees that work in Brea.
▪ **Policy CD-1.4.** Ensure that the City maintains a balance among residential, commercial, and industrial land uses.	***Consistent.*** As discussed under Goal CD-1, Brea is now and is projected to be jobs-rich, needing more housing development. Though the site is currently used for oil extraction and agriculture, the project site is zoned Hillside Residential and Single-Family Residential. The proposed project would contribute to the residential, commercial, and industrial land use balance.
▪ **Policy CD-1.5.** Provide opportunities for development of housing that responds to diverse	***Consistent.*** The Brea 265 Specific Plan would allow for 1,100 dwelling units consisting of low- and medium-density residential units with a target density of 4.2

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
community needs in terms of density, size, location, design, and cost.	dwelling units per acre. The proposed project would contribute a variety of housing options to the housing stock in Brea, including 76 affordable housing units.
▪ **Policy CD-1.7.** Create and maintain linked open spaces and pedestrian access that serve the entire community. ▪ **Policy CD-1.8.** Connect, where possible, all neighborhoods of the community and surrounding areas located with the City and Sphere of Influence with greenways and well-planned, well-located park areas. Maximize connections to hillside and open space areas. ▪ **Policy CD-1.9**. Encourage new development that is organized around compact, walkable, mixed-use neighborhoods and districts to conserve open space resources, minimize infrastructure costs, and reduce reliance on the automobile. ▪ **Policy CD-1.10.** Preserve open space wherever possible, especially in the hillside areas.	***Consistent.*** The Brea 265 Specific Plan encourages compact development and sets aside hillside area as open space. The proposed project would provide 47.5 acres of open space and 15.1 acres of parks/recreational space. Sidewalks, bicycle lanes, and trails would connect the open space areas and parks/recreational spaces within the project site and to the surrounding community. The proposed project would further improve existing public rights-of-way with landscaping, bicycle lanes, and trails. The proposed project would provide bicycle lanes and trails along Carbon Canyon Road, Lambert Road, Valencia Avenue, and Rose Drive that would further increase the connection of the area with Carbon Canyon Park, Chino Hills State Park, Brea Sports Park, and Olinda Ranch Neighborhood Park. The proposed project would further provide 70.65 acres of open space land for preservation adjacent to Chino Hills State Park as part of biological resources mitigation.
▪ **Policy CD-1.15.** Strongly encourage the master planning of any large contiguous land holdings. ▪ **Policy CD-1.16.** Strongly encourage the prezoning and annexation of unincorporated properties in the City of Brea in order to avoid the creation of new County islands.	***Consistent.*** The proposed project is a master planned community that includes 1,100 dwelling units on a 262.1-acre site. As part of the proposed project, the 219.1-acre portion of the project site currently within the City's sphere of influence would be annexed to the City and zoned "Brea 265 Specific Plan" to avoid the creation of new County islands.
GOAL CD-10: Maintain an effective regional transportation network. ▪ **Policy CD-10.1.** Work continually with Caltrans to improve access to and from State Route 57. ▪ **Policy CD-10.3.** Cooperate with surrounding jurisdictions to ensure the efficient operation of the arterial network system. ▪ **Policy CD-10.4.** Work with Caltrans, the Orange County Transportation Authority, and surrounding jurisdictions to provide adequate capacity on regional routes for through traffic and to minimize cut-through traffic on the local street system.	***Consistent.*** As discussed in Section 5.17, *Transportation*, and Appendix N to this DEIR, the traffic analysis evaluated traffic impacts to Caltrans facilities (two SR-57 ramps at Lambert Road and seven intersections along Imperial Highway), and the cumulative projects list included planned and/or approved projects in the vicinity of the project site in the cities of Brea, Fullerton, Placentia, Yorba Linda, and Chino Hills, thereby considering impacts of the proposed project beyond the limits of the project site. The proposed project would work with Caltrans to provide adequate capacity on regional routes for through-traffic to minimize cut-through traffic on the local street system. Refer to Section 5.17, *Transportation*.
▪ **Policy CD-10.6.** Recognize that Carbon Canyon Road will continue to serve high volumes of regional traffic despite its designation as a Modified Commuter. Thus, examine design solution alternatives that can improve the safety and efficiency of Carbon Canyon Road.	***Consistent.*** Carbon Canyon Road is a two-way street that currently provides three travel lanes, narrowing to two travel lanes in the easterly direction along the project frontage. As part of the proposed project, the south side of Carbon Canyon Road from Valencia Avenue to east along the project frontage would be constructed to its ultimate half-section width per the City's Major Arterial Highway standard and provide three 12-foot travel lanes and an 8-foot bike lane in the eastbound direction, separated by a 14-foot median within 88 feet of paved width and a right-of way of 120 feet. The proposed roadway enhancements would improve safety and efficiency of Carbon Canyon Road. The proposed project would also be required to contribute its fair share to improvements at Valencia Avenue and at Lambert Road/Carbon Canyon Road. With improvements and fair-share contribution, the intersection is anticipated to operate at a better level of

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
	service than in preproject conditions. Therefore, the proposed project would be consistent with improving the safety and efficiency of Carbon Canyon Road. .
GOAL CD-11: Provide a safe and efficient circulation system that meets the needs of the community. ▪ **Policy CD-11.1.** Maintain a circulation system that is based upon and is in balance with the Land Use Element of the General Plan. ▪ **Policy CD-11.2.** Establish Level of Service goals for designated City streets, and ensure that new development maintains these service levels.	***Consistent.*** The proposed project includes an internal circulation system of roadways, sidewalks, bicycle paths, and trails. The proposed project would include four main points of entry into the project site from surrounding roadways and multiple pedestrian access points that connect to existing trails and pedestrian facilities. The proposed roadway improvements include construction of Lambert Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive fronting the project site to their ultimate half-section Major Arterial Highway and Primary Arterial standards, per City's requirements. An emergency-only access would also be provided from Blake Road. Therefore, the proposed project's internal roadways and points of connection with existing roadways would be consistent with the Circulation Element and promote a safe and efficient circulation system that meets the needs of the city. All roadway designs and improvements would be reviewed and approved by the City. The internal circulation system was evaluated, as discussed in Impact 5.17-3 in Section 5.17, *Transportation*, and determined to have a less than significant impact provided that proposed project design features are implemented. The proposed project would meet the established level of service goals established by the City.
▪ **Policy CD-11.3.** Plan neighborhood streets, pedestrian walks, and bicycle paths as a system of fully connected routes throughout the City.	***Consistent.*** The project site is currently developed with agricultural and oil extraction facilities and is closed off to the surrounding communities. The proposed project would open and connect the project site to the surrounding community. The proposed project includes an internal network of streets, sidewalks, bicycle paths, and trails that supports automobile and pedestrian mobility throughout the project site. The proposed project's internal mobility system connects to the city's existing street, pedestrian, bicycle, and trail networks.
▪ **Policy CD-11.4.** Protect residential streets from arterial street traffic.	***Consistent.*** The proposed project would develop a master planned residential community with an internal residential street network. The proposed project would not include any arterial streets. Further, development of the proposed project would not redirect arterial street traffic flows to existing residential streets.
▪ **Policy CD-11.5.** Use traffic calming measures in residential neighborhoods where warranted and appropriate to enhance safety for pedestrians.	***Consistent.*** The interior local streets have been designed as pedestrian-oriented streets that incorporate traffic-calming measures. The interior streets would include a 5-foot-wide, curb-adjacent landscaped parkway and a 5-foot-wide sidewalk on both sides.
▪ **Policy CD-11.6.** Utilize creative methods to reduce congestion and improve circulation.	***Consistent.*** The proposed project would develop a bicycle, trail, and sidewalk network throughout the project site that would connect to existing and proposed facilities surrounding the project site. The proposed project would also enhance existing roadways abutting the project site with bikeways and trails.
▪ **Policy CD-11.10.** Work with the Brea Olinda Unified School District to establish safe routes to all schools and to facilitate better circulation surrounding schools in the A.M. and P.M. peak traffic periods.	***Consistent.*** Olinda Elementary School, immediately south of the western portion of the project site, is in Brea-Olinda Unified School District. As part of the proposed project, roadway enhancements (including bikeways and trails) along Valencia Avenue and Rose Drive would connect to existing pedestrian facilities on Birch Street. The enhancements would be designed and constructed to meet the City's design standards to ensure safety.
▪ **Policy CD-11.11**. Examine alternative methods such as traffic calming, landscaping, provision of bike/transit lanes to slow traffic, improve street capacity, and increase safety.	***Consistent.*** The proposed project would incorporate strategies to slow traffic and increase safety. The new residential streets would incorporate traffic-calming measures. Due the slow speeds, bicycles would share the on-site streets. The development under the proposed project would also incorporate lighting to illuminate roadways and pathways. Rights-of-way on-site and along Lambert

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
	Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive would be landscaped, including landscaped raised medians.
GOAL CD-13: Provide for an extensive, integrated, and safe bicycle, hiking, and pedestrian network throughout the community, and make Brea a pedestrian-friendly community. ▪ **Policy CD-13.1.** Develop and maintain a comprehensive and integrated system of bikeways that promotes bicycling riding for commuting and recreation. ▪ **Policy CD-13.2.** Provide for safe and convenient pedestrian connections to and from Downtown, other commercial districts, neighborhoods, and major activity centers within the City. ▪ **Policy CD-13.4**. Require new developments to provide for the use of alternative modes of transit via internal trails or travel ways – public or private – for pedestrians and vehicles other than cars. New developments shall include such features as well-designed sidewalks and parkways, bike lanes and paths, and dedicated bus turn-outs.	***Consistent.*** The proposed project includes an extensive system of trails, sidewalks, and bicycle paths. On-site, the proposed project would incorporate a trail system that connects to existing trails in the project site vicinity. These trails are designed to allow for direct connections or through neighboring communities to existing trails outside of the project site, including the Tracks at Brea Trail, El Cajon Trail, Chino Hills Trail, and Carbon Canyon Regional Park Trail, consistent with the intent of the Brea Trails Plan. The proposed project's sidewalks and roadways would connect to existing and proposed bicycle paths and trails along Lambert Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive. As part of the proposed project, roadway enhancement would add bikeways, trails, and landscaping along the aforementioned roads. Development of the proposed project would open up a site to the community that was previously closed off, contributing a pedestrian and bicycle friendly network throughout the city. The project site is in close proximity to existing office, commercial, and educational uses. The proposed project's roadway improvements along adjacent roadways would support the use of active forms of transportation to these areas.
GOAL CD-27: Promote balanced growth with supporting public services infrastructure.	***Consistent.*** Development of the proposed project would be concurrent with public utility extensions, including but not limited to water, wastewater, and electricity lines. As discussed in Section 5.19, *Utilities and Service Systems*, the proposed project is expected to be adequately served by the proposed improvements and would not adversely impact the existing public services infrastructure provided that applicable mitigation measures are implemented. As discussed in Section 5.15, *Public Services*, the proposed project would be adequately served by existing public services with mitigation.
▪ **Policy CD-27.1.** Integrate land use and transportation planning to provide adequate transportation system service standards.	***Consistent.*** Refer to the discussion under Policy CD-11.6.
▪ **Policy CD-27.2.** Monitor and maintain service levels standards for public services and infrastructure. ▪ **Policy CD-27-3.** Ensure that new development is in balance with the provision of services and/or funding.	***Consistent.*** Refer to the discussion for Goal CD-27.
GOAL CD-28: Assist in the provision of adequate regional and local transportation facilities. ▪ **Policy CD-28.1.** Cooperate with other agencies to address regional issues and opportunities related growth, transportation, infrastructure, and other planning issues. ▪ **Policy CD-28.2.** Promote the expansion and development of alternative methods of transportation.	***Consistent.*** The proposed project includes roadway enhancements that include bicycle lanes and pedestrian paths that connect to the existing local and regional bikeways and trails to promote alternative methods of transportation. There are also four bus lines that operate in the vicinity of the project site. The proposed project would coordinate with Caltrans and the City of Placentia as applicable to reduce traffic impacts, as discussed in Section 5.17 *Transportation*, so that adequate regional and local transportation facilities are provided.
▪ **Policy CD-28.3.** Encourage the development of housing within close proximity to jobs and services.	***Consistent:*** The project site is in close proximity to existing commercial, office, and institutional uses that serve the community, and the proposed project would provide 1,100 housing units.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
Housing Element	
GOAL 2.0: Assist in the provision of adequate housing to meet the needs of the community. Establish a balanced approach to meeting housing needs that includes the needs of both renter and owner households. ▪ **Policy 2.1.** Financial Resources. Pursue expanded financial resources to support in the production of housing affordable to Brea's workforce, disadvantaged communities, and special needs populations. . ▪ **Policy 2.2.** Mixed Income Housing. Utilize the City's Inclusionary Housing Ordinance as a tool to integrate affordable units within market rate developments, or pay an in-lieu fee to support the provision of affordable housing.	***Consistent.*** The proposed project includes low- and medium-density housing with average target density of 4.2 dwelling units per acre (du/ac). Each planning area within the Specific Plan would be either from 1.0 to 6.0 du/ac or from 6.1 to 12.0 du/ac. The City's RHNA allocation during the 2021-2029 housing-element cycle is 2,365 units. Therefore, development of 1,100 units on the project site would assist in fulfilling the City's share of regional housing needs. The proposed project also includes 76 affordable housing units.
GOAL 3.0: Provide adequate housing sites through appropriate land use, zoning, and specific plan designations to accommodate Brea's share of regional housing growth needs.	***Consistent.*** The project site is currently zoned HR (Hillside Residential) and R-1 (Single Family Residential), and the proposed project would use the City's Hillside Zoning Ordinance as a foundation for implementing the Specific Plan for applicable areas. The City of Brea's RHNA allocation for the 2021-2029 planning period is 2,365 units. The proposed project would provide 1,100 units, including 76 affordable units, including 25 very-low income and 51 low income units, to accommodate the City's share of regional housing needs. The proposed project would also allow for the development of seven housing product types, therefore increasing the City's housing supply and positively contributing to the overall housing needs of the City and the region.
▪ **Policy 3.6.** Hillside Development. Base densities in Brea's hillsides on the ability of infrastructure, ingress and egress for evacuations, landform, physical constraints, and emergency response capabilities to support development.	***Consistent.*** The eastern portion of the project site is currently zoned Hillside Residential, and while the proposed project would change the existing zoning on site to Brea 265 Specific Plan, the proposed project would be designed in accordance with the intent of the Hillside Development Policy. The proposed project provides adequate ingress and egress for evacuations and emergency response, as discussed in Section 5.17, *Transportation*. Development under the proposed project would be mindful of the changing topography and preserve portions of the hillside areas as open space.
▪ **Policy 3.7.** Annexation. Pursue phased annexation of the Brea's Sphere of Influence to provide additional growth opportunities for a range of housing types consistent with infrastructure capacities.	***Consistent.*** Upon approval of the project by the City, the unincorporated portion of the project site in the City's sphere of influence would be annexed into the City, consistent with the 2005 pre-annexation agreement. As discussed in Section 5.19, *Utilities and Service Systems*, the proposed project is expected to be adequately served by existing public utilities with mitigation. Further, as discussed in Section 5.15, *Public Services*, the proposed project would be adequately served by existing public services.
GOAL 6.0: Promote a healthy and sustainable Brea through support of existing and new housing which minimizes reliance on natural resources and automobile use. ▪ **Policy 6.5.** Transportation Alternatives and Walkability. Incorporate transit and other transportation alternatives including walking and bicycling into the design of new development, particularly in areas within a half-mile of	***Consistent:*** The proposed project includes an extensive system of trails, sidewalks, and bicycle paths. On-site, the proposed project would incorporate a trail system that connects to existing trails in the project site vicinity. These trails are designed to allow for direct connections or through neighboring communities to existing trails outside of the project site, including the Tracks at Brea Trail, El Cajon Trail, Chino Hills Trail, and Carbon Canyon Regional Park Trail, consistent with the intent of the Brea Trails Plan. The proposed project's sidewalks and roadways would connect to existing and proposed bicycle paths and trails along Lambert Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive. As part of the proposed project, roadway enhancement would add bikeways, trails, and

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
designated transit stops and the City's "Tracks at Brea" walking and biking trail system. ▪ **Policy 6.6.** Jobs/Housing Balance – Encourage a closer link between housing and jobs in the community, including housing opportunities affordable to Brea's modest income workforce.	landscaping along the aforementioned roads. Development of the proposed project would open up a site to the community that was previously closed off, contributing a pedestrian and bicycle friendly network throughout the city. The proposed project would provide 76 affordable housing units and the project site is in close proximity to existing office, commercial, and educational uses, thereby increasing housing supplies where demands are present. As discussed in Section 5.14, *Population and Housing*, the proposed project would improve the jobs-housing balance in the city from the current 2.98 ratio to 2.80.
Community Resources	
GOAL CR-1: Provide a variety of parks and recreation facilities that meet the diverse needs and interests of the community. ▪ **Policy CR-1.1.** Develop a high-quality network of parks and recreational facilities that meet the needs of families, young adults, seniors, children, and disabled individuals. ▪ **Policy CR-1.2.** Provide similar or equal levels of parks and recreational facilities to all areas of the community. ▪ **Policy CR-1.3.** Use the following as standards for park development, recognizing that the function of a particular park also affects classification within the system: [Refer to the table on Page 4-13 of the Brea General Plan]. ▪ **Policy CR-1.4.** Incorporate into large-scale residential developments small neighborhood parks and greens suitable for unstructured play and passive recreation. ▪ **Policy CR-1.5.** Develop, wherever possible, recreation facilities that have multi-use capabilities and high degree of adaptability to more intensive use or uses as recreation demand changes and/or population density increases. ▪ **Policy CR-1.6.** Provide similar or equal attention to the development of facilities for individualized activities (casual park use, bicycling, walking, running, skating and riding) as is given to organized recreation and sports.	***Consistent.*** The proposed project includes approximately 47.5 acres of open space and 15.1 acres of parks/recreational facilities on site. In addition, the proposed project includes a network of bicycle/pedestrian and public trails that connect to a larger trail network in the city. The 13-acre sports park adjacent to the Brea Sports Park would provide various recreation amenities such as a baseball field, tennis courts, soccer field, pickleball courts, a full basketball court, tartan track with fitness stations, innovative play area, shade structure, concession stand, restrooms with drinking fountain and bike racks, team warmup field, and parking. The 2.1-acre Staging Area Park would include shade structure with picnic tables and trash receptacles, restroom with drinking fountain and bike racks, and gated secure parking. The Staging Area Park trailhead would allow residents to access neighboring Carbon Canyon Regional Park and Chino Hills State Park as well as other areas of the community, through multiple accessible routes. The gated parking area would be open to the public during the operating hours. These parks and open spaces would be connected through trails for walking, hiking, and bicycling. Therefore, these open space and recreational opportunities would meet the diverse needs and interests of the community.
GOAL CR-2: Protect and preserve existing parks and recreation facilities. ▪ **Policy CR-2.1.** Protect existing public parks and open space areas from non-recreational uses.	***Consistent.*** The existing project site does not contain parks or recreational facilities. Development under the proposed project would open the project site to the surrounding community and would incorporate parks, open space, and recreational facilities, as discussed in Goal CR-1.
GOAL CR-3: Maximize use of open space areas capable of supporting park-type activities. ▪ **Policy CR-3.5.** Coordinate efforts with other public agencies regarding State and federal programs for existing and potential trail systems, recreational facilities, and recreation programs. ▪ **Policy CR-3.6.** Encourage the development of recreational facilities by the private sector,	***Consistent.*** See Goal CR-1.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
including small parks and large-scale facilities requiring a high level of supporting services, supplies, and maintenance. Recreational facilities should be available to all members of the public. ▪ **Policy CR-3.7.** Develop parks and recreation facilities in a manner that ensures that a minimum of damage to the environment occurs, while still providing a high quality recreation experience.	
GOAL CR-4: Preserve open space aggressively for diverse purposes – as a visual and scenic resource, for habitat conservation, to protect watersheds, and for recreation. ▪ **Policy CR-4.1.** Protect and preserve open space wherever possible. ▪ **Policy CR-4.2.** Select areas for open space preservation using an evaluation system that incorporates the following selection criteria: connectivity, access/recreations, sensitive areas, natural features, subdivision pattern, and buffer zones. ▪ **Policy CR-4.3.** Work aggressively with the Orange County, Los Angeles County, State, and other appropriate public agencies, private entities, and landowners to conserve, protect, and enhance open spaces and natural resources, particularly within the sphere of influence.	***Consistent.*** The project site is currently being used for oil production and agricultural uses. However, the project site contains various special status vegetation communities, plant and wildlife species, natural sensitive habitats, and jurisdictional resources—Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Therefore, as part of mitigating effort, the project applicant is required to prepare and implement a Habitat Conservation Plan to mitigate impacts to various special status species and sensitive and critical habitats through restoration and reestablishment activities. It is anticipated that the restoration and reestablishment activities would occur on 52.86 acres of off-site open space lands, to be dedicated/preserved within and immediately adjacent to the existing Puente-Chino Hills wildlife corridor, as determined by the US Fish and Wildlife Service, which may include properties owned by SWEPI Retained Drill Sites and Aera Energy oil retained lands that are within or adjacent to Chino Hills State Park. The proposed project would also coordinate with the USACE, RWQCB, and CDFW to receive necessary permits (401 certification, 404 permit, 408 permit, and 1602 Streambed Alteration Agreement) prior to disturbance of any jurisdictional resources. The proposed project would preserve approximately 47.5 acres of land as open space and provide an additional 15.1 acres of land as parks and recreation space. The project site is also currently zoned for HR (Hillside Residential) and R-1, not for open space. Therefore, the proposed project is consistent with the goal of preserving open space aggressively for diverse purposes.
GOAL CR-5: Provide a flexible and balanced open space and conservation plan. ▪ **Policy CR-5.1.** Create an open space network that is part of both the natural and urban fabric of Brea and connects to the regional open space system. ▪ **Policy CR-5.2.** Encourage compatible uses and activities near open space areas such as schools, parks, residential, and agricultural uses.	***Consistent.*** See Goal CR-4. Additionally, the proposed project would preserve 47.5 acres of open space on-site. Trails through the proposed project's open space and parks/recreation space would connect to the existing trails in the vicinity of the project site, including Carbon Canyon Park, Brea Sports Park, and the Tracks at Brea Trail. A 13-acre sports park would be provided immediately north of the existing Brea Sports Park, and a 2.1-acre staging area park would allow trailhead access to neighboring Carbon Canyon Regional Park and Chino Hills State Park as well as other areas of the community through multiple routes. The proposed project would develop a residential community with recreational commercial and recreation/parks that are compatible with open space areas on and adjacent to the project site.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
Goal CR-6: Provide an extensive trail system that links all areas of Brea. ■ **Policy CR-6.1.** Create linkages to trails within Carbon Canyon and Chino Hills State Park existing and proposed trail system. ■ **Policy CR-6.2.** Coordinate trails placement with landowners and conservation biologists knowledgeable of the area. ■ **Policy CR-6.3.** Provide a useful, enjoyable, safe, and efficient trail system for equestrians and hikers, with the following objectives and standards: • Provide multi-purpose trails, where possible, to serve hikers, bicyclers, and horseback riders • Link trails with adjacent City, County, and State trail systems • Maintain trail areas in good condition, and free of litter and debris • Design trails to be flexible and site-specific to minimize the impact on adjacent property and fragile habitats • Provide a trail system with both short and long hikes/rides and serve the needs of both beginning and advanced hikers/riders • Utilize citizen volunteers to assist in the development, maintenance and operation of trails and facilities • Keep citizens aware of the trail system through publication of a trails map which also notes safety and courtesy tips • Separate trails from automobile traffic when possible in order to provide safe conditions for riders and walkers • Provide appropriate signs to mark all trails • Design trails entrances to prevent unwanted trail usage by motorized vehicles • Locate trails to provide linkages between open space and the City greenway system ■ **Policy CR-6.4.** Work to incorporate recreational amenities such as trail systems, bike paths, and jogging paths with existing drainage ways, open-space corridors, and utility rights-of-way so that natural resources are retained as assets in the community's recreational system and natural environment. ■ **Policy CR-6.5.** Coordinate efforts with other public agencies regarding State and federal programs for existing and potential trail systems, recreational facilities, and recreation programs. ■ **Policy CR-6.6.** Develop the trail system illustrated in Figure CR-2.	***Consistent.*** The proposed project includes an extensive trail system that would connect to existing trails in the vicinity of the project site. The pedestrian circulation system within Brea 265 would provide connections to three major city and regional trail systems, including neighboring Carbon Canyon Regional Park Trail, Olinda Oil Museum and Trail, and the Tracks at Brea Trail. The proposed bikeway system is also designed to facilitate continuous bicycle access throughout the project site and provide linkage to the regional and local bikeway networks, consistent with the City's General Plan Bikeway Plan. Trails on-site would be maintained by the HOA and would be kept free of litter and debris. Trails would lead to publicly accessible vista points where feasible. The proposed project would contribute to the City's trail system. In addition to the trail system, the proposed project would develop sidewalks and bikeways, which would connect to existing pedestrian facilities along roadways.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
▪ **Policy CR-6.7**. Require new developments to provide access and linkage to the citywide trail system.	
GOAL CR-7: Encourage an urban and walkway trail system within the urban areas of the City. ▪ **Policy CR-7.1.** Encourage the development of landscaping, walkways, and bike trails that provide direct pedestrian access between work places and residential neighborhoods. ▪ **Policy CR-7.2**. Provide shielded safety lighting along trails and other public and private walkways separated from a street.	***Consistent.*** Refer to the discussion for Goal 3 and Goal CR-6 (and associated policies) and Goal PS-3 (and associated policies).
GOAL CR-8: Preserve and maintain wildlife and animal movement corridors ▪ **Policy CR-8.1.** Preserve key wildlife migration corridors and habitat areas. ▪ **Policy CR-8.2.** Provide adequate wildlife crossings where roadways have severed habitat areas. ▪ **Policy CR-8.3.** Cooperate with regional agencies and authorities with similar goals in protecting and enhancing wildlife and animal movement corridors. ▪ **Policy CR-8.4.** Regular monitoring of medium and large mammals is necessary to gauge the effectiveness of wildlife corridors and to identify or increases in wildlife populations.	***Consistent.*** The project site is not within an identified wildlife corridor or a wildlife linkage. However, the project site is within critical habitat for the California coastal gnatcatcher. With the incorporation of Mitigation Measures BIO-1 through BIO-3 in Section 5.4, *Biological Resources*, the proposed project would result in a less than significant impact. The mitigation measures would ensure that the project impacts relating to wildlife and animal movement would be less than significant. Refer to Section 5.4, *Biological Resources*.
GOAL CR-9: Preserve and maintain open space, natural habitat, and vegetation communities that support wildlife species and animals. ▪ **Policy CR-9.1**. Support regional and sub-regional efforts to acquire, develop, operate, and maintain an open space system extending from the Puente Hills to the Chino Hills. ▪ **Policy CR-9.2.** Preserve the integrity of blue line streams and riparian habitat areas. ▪ **Policy CR-9.3**. Preserve and restore the habitat value of creek corridors though the preservation of native plants and the replacement of invasive, non-native plants with native plants. ▪ **Policy CR-9.4.** Protect sensitive plant species resources from the impacts of development.	***Consistent.*** With the incorporation of Mitigation Measures BIO-1 through BIO-4, the proposed project would result in a less than significant impact. The mitigation measures would ensure that the project impacts relating to vegetation communities, wildlife, habitats, waterways, and sensitive species would be less than significant. Refer to Section 5.4, *Biological Resources*.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
▪ **Policy CR-9.5.** Manage areas of diverse wildlife habitat as a natural resource and prevent major destruction or disruption. ▪ **Policy CR-9.6.** Use specific management programs using sound ecological principles and professionally accepted methods are necessary to protect and restore sensitive animal populations and their habitats.	
GOAL CR-10: Pursue aggressively the preservation and protection of scenic resources. ▪ **Policy CR-10.1.** Create and enforce special standards for development occurring within potential scenic highway corridors.	***Consistent.*** As discussed in Section 5.1, *Aesthetics*, the proposed project would not adversely affect the existing scenic resources, including parks and recreation facilities, dedicated open space, prominent ridgelines, view corridors, and scenic view points as identified in the Community Resources Element Figure CR-4, Scenic Resources.
▪ **Policy CR-10.3.** Manage stands of mature trees, particularly native species, as unique and visual resources.	***Consistent.*** The proposed project would result in removal of most trees on-site, including mature and native trees. However, impacts from removal of these trees would be less than significant, as discussed in Impact 5.4-1 in Section 5.4, *Biological Resources*, because they are not locally rare and still common throughout their range. And the adjacent Chino Hills and nearby Puente and Whittier Hills support a large mature and native tree population.
▪ **Policy CR-10.4.** Preserve major rock outcroppings as unique landmarks and visual resources to the maximum extent possible.	***Consistent.*** The proposed project implements the City of Brea and the County of Orange grading standards. The Specific Plan would preserve the area adjacent to Carbon Canyon Regional Park to the east to take advantage of the varying terrain with trail connections and view opportunities. Grading is intended to respond to the project site's landforms and topography.
▪ **Policy CR-10.5.** Preserve stream courses in their natural state, as they represent a recreation resource, provide community identity, and serve as unifying corridors in the planning area.	***Consistent.*** As discussed in Section 5.4, *Biological Resources*, four drainages run through the project site totaling 4,499 linear feet. Development of the proposed project would remove most of these drainages. However, these drainages are not currently accessible to the public and do not currently represent a recreation source. Since the drainages are closed off to the public, the drainages do not provide a community identity nor serve as a unifying corridor. Moreover, the proposed project would be required to mitigate impacts to jurisdictional resources through restoration/reestablishment of impacted areas at a 3:1 ratio at an off-site open space area to be dedicated by the project applicant. Therefore, development under the proposed project would not deplete an existing recreation resource. In addition, with implementation of identified mitigation measures in Section 5.4, impacts to jurisdictional waters would be less than significant.
▪ **Policy CR-10.6.** Work aggressively with Orange County, Los Angeles County, State, and other appropriate public agencies, private entities and landowners to conserve, protect and enhance natural resources, particularly within the sphere of influence.	***Consistent.*** The proposed project would be required to coordinate with CDFW, US Fish and Wildlife Service, USACE, and RWQCB to receive necessary permits prior to disturbance of any special and sensitive biological resources.
GOAL CR-13: Improve air quality ▪ **Policy CR-13.1.** Implement City-wide traffic flow improvements. ▪ **Policy CR-13.2.** Promote energy conservation and recycling by public and private sectors. ▪ **Policy CR-13.3.** Integrate air quality planning with land use, economic development, and transportation planning.	***Inconsistent.*** As discussed in Section 5.3, *Air Quality*, the proposed project would result in a less than significant construction air quality impact with the incorporation of Mitigation Measure AQ-1, but would have significant and unavoidable operational air quality impacts even with mitigation. The proposed project would exceed the South Coast AQMD's threshold for volatile organic compounds (VOC) but emissions for other criteria pollutants would not be exceeded. As discussed in Section 5.8, *Greenhouse Gas Emissions*, the proposed project would result in significant and unavoidable GHG emissions impact even with mitigation. Therefore, the proposed project would conflict with

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
▪ **Policy CR-13.5.** Encourage alternative modes of transportation, such as walking, biking, and public transportation to reduce emissions associated with automobile use. ▪ **Policy CR-13.6.** Cooperate with the South Coast Air Quality Management District and Southern California Association of Governments in their efforts to implement the regional Air Quality Management Plan. ▪ **Policy CR-13.7.** Work with other responsible federal, State, and County agencies to decrease air pollution emissions occurring within the air basin. ▪ **Policy CR-13.8.** Cooperate and participate in regional air quality management planning, programs, and enforcement measures.	the South Coast AQMD and SCAG's efforts to implement the regional air quality management plan and contribute adversely to emissions in the air basin. The proposed project would comply with the Building Energy Efficiency Standards (Title 24) and incorporate energy efficiency features, water conservation features, and materials efficiency to promote energy conservation. The Brea 265 Specific Plan encourages sustainability through developing a mobility network with roadways, pedestrian and bicycle trails and sidewalks, and pathways that link different areas of the project site and link to existing pedestrian facilities. This encourages alternative modes of transportation, such as walking and biking, to reduce emissions associated with automobile use. As discussed in Section 5.17, *Transportation*, project-generated VMT per service population would lower than Brea's VMT per service population for the corresponding traffic analysis zones. Therefore, VMT impacts would be less than significant.
GOAL CR-14: Preserve historically significant landmarks and/or sites, individual structures, objects, and neighborhoods, and encourage appropriate rehabilitation. ▪ **Policy CR-14.1.** Ensure design compatibility of new development within close proximity to designated historic structures and neighborhoods. ▪ **Policy CR-14.2.** Create historic districts for areas with a concentration of historically and architecturally significant structures. ▪ **Policy CR-14.3.** Review all development and rehabilitation proposals affecting historic structures, landmarks, and objects in terms of site design and building design. ▪ **Policy CR-14.4.** Explore funding resources/alternatives for rehabilitation and restoration of historic structures. ▪ **Policy CR-14.5.** Encourage the recycling and re-use of existing historic structures through incentive programs. ▪ **Policy CR-14.6.** Discourage the demolition of structures eligible for listing in the National Register of Historic Places and/or the State Historic Landmarks, the County, and/or the local historic register. ▪ **Policy CR-14.7.** Preserve and enhance the City's history and tradition through inclusion of historic sites and other resources in the City's park lands. ▪ **Policy CR-14.8.** Accommodate heritage elements in recreation programs and events.	***Consistent.*** Development under the Brea 265 Specific Plan would not result in the adverse change of historical resources. As discussed under Impact 5.5-1 in Section 5.5, *Cultural Resources*, the Brea-Olinda Oil Field District was not recommended eligible for listing in the California Register. The development at the project site would not remove historically significant landmarks, sites, or structures. With regard to archeological and paleontological materials, compliance with Mitigation Measures CUL-1 and GEO-1, respectively, would reduce impacts to a less than significant level.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
Public Safety Element	
GOAL PS-2: Improve community safety and reduce opportunities for criminal activity through appropriate physical design. ■ **Policy PS-2.1.** Develop defensible space guidelines to be used in the review of development proposals. ■ **Policy PS-2.2.** Maximize natural surveillance through physical design features, including well-lighted driveways, walkways, and exteriors; visible entryways from surrounding structures and businesses; well-defined walkways and gates; and landscaping that does not obscure visibility. ■ **Policy PS-2.3.** Ensure that community areas and amenities such as transit stops, sidewalks, plazas, and parks are appropriately lighted, free of hidden spaces, and patrolled. ■ **Policy PS-2.4.** Practice active surveillance measures in certain areas such as parking structures.	***Consistent.*** As discussed in Section 5.15, *Public Services*, the proposed project would have a less than significant impact to police protection services with the implementation of PPP PS-10 through PPP PS-12 and incorporation of Mitigation Measure PS-1. The east side of the project site would have gated entries except for the entry into the staging area park and emergency-only access from Blake Road. The west side of the project site would not have gated entries. The new sports park and the staging area park would provide adequate lighting and visible entryways to encourage natural surveillance. The residential areas would be fenced. Active and passive security measures would deter criminal activity at the project site.
GOAL PS-3: Provide safe pedestrian environments citywide. ■ **Policy PS-3.1.** Ensure that pedestrian safety is enhanced and maintained through the inclusion of well-designed streets, sidewalks, crosswalks, traffic control devices, and school routes throughout Brea. ■ **Policy PS-3.2.** Require all developments to provide adequate safety lighting in pedestrian areas and parking lots. ■ **Policy PS-3.3.** Provide shielded safety lighting along trails and other public and private walkways separated from a street.	***Consistent.*** The proposed project would develop sidewalks, trails, and bicycle paths throughout the project site that would connect to existing pedestrian facilities in the vicinity of the project site. The proposed project would also provide trails and bicycle paths along public roadways, including Lambert Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive. All roadways and pedestrian facilities developed as part of the proposed project would be designed and constructed to meet the City's standards to promote a safe pedestrian environment. Roadways, pedestrian amenities, and parking areas on-site would be lit to provide a measure of safety.
GOAL PS-4: Protect the community from the hazards associated with the transportation, use, and storage of hazardous materials in the urban environment. ■ **Policy PS-4.2.** Reduce the risks associated with ground transportation hazards. ■ **Policy PS-4.3.** Work with responsible Federal, State, and County agencies to identify and regulate the disposal of toxic materials.	***Consistent.*** As discussed in Section 5.9, *Hazards and Hazardous Materials*, the proposed project would have a less than significant impact regarding hazards and hazardous materials with the incorporation of Mitigation Measures HAZ-1 through HAZ-12. The incorporation of the identified mitigation measures would ensure that impacts relating to the handling and transportation of such materials or potential release of hazardous substances are less than significant. The development under the Brea 265 Specific Plan would further be required to comply with all applicable federal, State, and local regulations regarding hazardous materials. With regard to policy PS-4.2, the proposed project would include roadways and bicycle and pedestrian facilities that would be designed and constructed to reduce pedestrian-vehicle conflicts and reduce transportation hazards.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
GOAL PS-5: Minimize the public's exposure to potential hazards associated with existing and abandoned oil facilities. ▪ **Policy PS-5.1.** Work closely with responsible State and Federal agencies to ensure that active oil field operations comply with all current regulations and, once oil field operations cease, that appropriate closure and clean-up activities occur. ▪ **Policy PS-5.2.** Continue to support the regulations of the California Division of Oil, Gas, and Geothermal Resources regarding abandoned oil facilities. ▪ **Policy PS-5.3.** Require comprehensive investigation, disclosures, and remediation of any former oil field property proposed for an alternative use.	***Consistent.*** The implementation of the Brea 265 Specific Plan would redevelop a site that was used for oil extraction and agricultural uses into a residential development. Development at the project site would comply with local, state, and federal regulations for the closure of oil field operations and handling of hazardous materials. As discussed in Section 5.9, *Hazards and Hazardous Materials*, the proposed project would have a less than significant impact regarding hazards and hazardous materials with the incorporation of Mitigation Measures HAZ-1 through HAZ-12.
GOAL PS-6: Protect the community from wildland fires. ▪ **Policy PS-6.1.** Consider implementing a vegetation management plan that considers non-traditional methods of controlling vegetation, such as prescribed burning, in undeveloped areas. ▪ **Policy PS-6.2.** Encourage residents to plant and maintain fire-retardant slope cover to reduce the risk of brush fire in areas adjacent to the canyons, and develop and implement stringent site design and maintenance standards for areas with high fire potential. To the extent possible, native, non-evasive plant material are encouraged. ▪ **Policy PS-6.3.** Assure provision of adequate fire equipment access and fire suppression resources to all developed and open space areas. ▪ **Policy PS-6.4.** Require new development to ensure that the City's five-minute fire response time be maintained.	***Consistent.*** As discussed in Section 5.20, *Wildfire*, the proposed project would result in a less than significant impact with regard to wildfire. The proposed project includes fuel modification zones (see Figure 5.20-1) along its northern and eastern boundaries. The fuel modification zones would include a wet zone with 100 percent removal of undesirable shrubs and a thinning zone with 50 percent thinning of shrubs. These areas may include approved plant species from Brea Fire and OC Fire guidelines. The development of the Specific Plan would be designed to meet the City's Fire Code, which would ensure adequate provision and access to fire equipment and resources. Additionally, the project applicant is required submit an overall Fire Master Plan at the time of the project approval to be reviewed and approved by the City of Brea Fire Department as conditions of approval. The conditions of approval would also require that the project applicant submit separate fire plans at the time of tentative tract map review process for individual planning areas to be reviewed and approved by the Brea Fire Department (PPP PS-5). The existing average response times for Brea Fire ranges from 4 minutes 47 seconds to 5 minutes 4 seconds, where the City's goal is to respond within 4 minutes for the first fire apparatus to arrive on scene, and 8 minutes for a multiunit response team arrive on scene. As discussed under Section 5.15, *Public Services*, and Section 5.20, *Wildfire*, the proposed project would have a less than significant impact to fire protection services and from wildfire with implementation of PPP PS-1 through PPP PS-9.

Table 5.11-2 Consistency with General Plan Goals and Policies

Relevant Goals and Policies	Compliancy Analysis
GOAL PS-7: Reduce the risk to the community from flooding hazards. ▪ **Policy PS-7.1.** Cooperate and work with the Orange County Flood Control District to ensure District flood control facilities are well maintained and capable of accommodating, at a minimum, 100-year storm flows. ▪ **Policy PS-7.2.** Require that new developments minimize stormwater and urban runoff into drainage facilities by incorporating design features such as detention basins, on-site water features, or other strategies. ▪ **Policy PS-7.3.** Maintain an active storm drain inspection program. ▪ **Policy PS-7.4.** Protect critical facilities located within areas subject to flooding. ▪ **Policy PS-7.5.** Evaluate and monitor water storage facilities to determine which facilities are not self-contained and might pose an inundation hazard to downstream properties. ▪ **Policy PS-7.6.** Employ strategies and design features that will reduce the amount of impervious surfaces (i.e. paved area) for new development projects.	***Consistent.*** As discussed in Section 5.10, *Hydrology and Water Quality*, the project site is not located within a 100-year flood hazard zone, but a portion of the project site east of Rose Drive is within the flood hazard zone for the Carbon Canyon Dam. With the implementation of Mitigation Measure HYD-1 (in Section 5.10), the proposed project would have a less than significant impact to flooding hazards. The proposed project would include an on-site drainage system. Water quality and detention basins would be provided within the project site. This would minimize the amount of stormwater runoff leaving the Site. The Specific Plan also identifies the use of water quality basins as potential stormwater treatment areas. The proposed project would increase impervious surfaces compared to existing conditions; however, as discussed in Section 5.10, potential impacts to drainage would be less than significant with implementation of PPP HYD-1 through PPP HYD-3. The drainage system on-site would be maintained and inspected by the City.

Source: City of Brea General Plan.

Land Use Designation and Zoning

Approximately 219.1 acres of the northern portion of the project site is in unincorporated Orange County, and 43 acres of the southern portion of the project site is in the City of Brea. The unincorporated portion of the project site is currently zoned A1(O), General Agriculture with an oil production overlay (Orange County 2016). The unincorporated portion of the project site has the land use designations: 1B (Suburban Residential), 4 (Public Facilities), and 5 (Open Space) (Orange County 2015). The southern portion of the project site, within the City of Brea, is zoned HR (Hillside Residential) with a corresponding General Plan land use designation of Hillside Residential.

The Local Agency Formation Commission identifies lands for cities' annexation and establishes cities' spheres of influence. A city may identify zoning and land use designations for areas within its sphere of influence for when such lands are annexed into the city. The eastern side of the project site within the sphere of influence is prezoned HR (Hillside Residential), with a corresponding General Plan land use designation of Hillside Residential (similar to the portion of the project site within the City of Brea). The western side of the project site is prezoned Single-Family Residential (R-1) ,with a corresponding General Plan land use designation of Low Density Residential.

With approval of the proposed project and the Development Agreement, the 219.1-acre portion of the project site within the sphere of influence would be annexed to the City, consistent with the 2005 pre-annexation agreement between the City of Brea, County of Orange, and Aera Energy (project applicant). In addition, the project site would have a new General Plan Land Use designation of Brea 265 Specific Plan. The Brea 265 Specific Plan land use and development standards are developed based on the City's Hillside Zoning Ordinance. Approval of the proposed project and requested discretionary actions, including the Development Agreement, would allow for the proposed development under the Brea 265 Specific Plan.

Conclusion

As discussed under Impact 5.11-2, the proposed project would be consistent with many goals and policies of the City's General Plan and SCAG's RTP/SCS.

Level of Significance Before Mitigation: Less than significant impact.

5.11.5 Cumulative Impacts

The proposed project involved an amendment to the General Plan Land Use designations and zoning classifications for the project site, but as demonstrated in Impact 5.11-2, the proposed project would be consistent with most goals and policies of the City's General Plan. Land use and zoning regulations are derivatives of a City's general police power. As shown in *Sierra Club v. County of Napa*, 121 Cal. App.4th 1490 (2004), a given project need not be in perfect conformity with each and every general plan policy. To be consistent, a [project] must be "compatible with" the objectives, policies, general land uses and programs specified in the general plan. Table 5.11-1 provides an analysis as to why the proposed project is consistent (i.e., "compatible") with SCAG's adopted RTP/SCS, and Table 5.11-2 provides an analysis of why the proposed project is compatible with the City of Brea General Plan. Other development projects in the city are also required to demonstrate consistency with the City's General Plan and other applicable policies and regulations governing land use prior to approval. The proposed project would allow for additional employment opportunities during construction and provide necessary housing units to meet the RHNA allocation and to improve the City's overall jobs-housing balance while providing adequate supporting infrastructure and services. Implementation of cumulative development, when combined with the proposed project, would not result in cumulatively considerable land use impacts.

5.11.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.11-1 and 5.11-2.

5.11.7 Mitigation Measures

No mitigation measures are required.

5.11.8 Level of Significance After Mitigation

Impacts are less than significant prior to mitigation. Therefore, no significant unavoidable adverse impacts relating to land use remain.

5.11.9 References

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5.12 MINERAL RESOURCES

This section of the Draft EIR evaluates the potential for the proposed project to impact the mineral resources as defined by the Department of Conservation's Mineral Resources Program.

5.12.1 Environmental Setting

5.12.1.1 REGULATORY BACKGROUND

Mineral Resources Project

The Mineral Resources Program of the Department of Conservation is divided into two projects, the Mineral Resources Project and the Mineral Hazards Project. These two projects provide data about California's varied nonfuel mineral resources (such as metals and industrial minerals), naturally occurring mineral hazards (such as asbestos, radon, and mercury), and active and historical mining activities throughout the state.

The Mineral Resources Project classifies nonfuel mineral resources into three categories: metals, industrial minerals, and construction aggregate. Metals include gold, silver, and copper; industrial minerals include boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate includes sand and gravel and crushed stone. The primary focus of the Mineral Resources Project is to classify lands throughout the state that contain regionally significant mineral resources, as mandated by the Surface Mining and Reclamation Act of 1975 (SMARA).

SMARA Mineral Land Classification Project

In 1975, the California legislature enacted SMARA, which provides for the reclamation of mined lands and directs the State Geologist to classify (identify and map) the nonfuel mineral resources of the state to show where economically significant mineral deposits occur or are likely to occur based upon the best available scientific data. Reclamation of mined lands is within the purview of the Division of Mine Reclamation, but the process of inventorying nonfuel mineral resources is the responsibility of the Mineral Resources Project. Under SMARA (Public Contract Code, Division 2, Article 2, Section 10295), "minerals" means any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum.

The classification process involves the determination of Production-Consumption (P-C) Region boundaries based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only the urbanized or urbanizing parts of the region and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four Mineral Resource Zones (MRZ), a Scientific Resource Zone (SZ).

- **MRZ-1:** A mineral resource zone where adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2:** A mineral resource zone where adequate information indicates that significant mineral deposits are present or likely to be present, and development should be controlled.
- **MRZ-3:** A mineral resource zone where the significance of mineral deposits cannot be determined from the available data.
- **MRZ-4:** A mineral resource zone where there is insufficient data to assign any other MRZ designation.
- **SZ Areas:** Containing unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.

As part of the classification process, an analysis of site-specific conditions is used to calculate the total volume of aggregates within individually identified "resource sectors." Resource sectors are MRZ-2 areas identified as having regional or statewide significance. Anticipated aggregate demand in the P-C Regions for the next 50 years is then estimated and compared to the total volume of aggregate reserves identified in the P-C Region.

5.12.1.2 EXISTING CONDITIONS

The project site is in MRZ-1 and MRZ-3, as shown in Figure 5.12-1, *Mineral Resource Zone Map*. MRZ-1 refers to areas where adequate information indicates that no significant mineral deposits are present or likely to be present. MRZ-3 refers to area where the significance of mineral deposits cannot be determined from the available data.

5.12.2 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:

M-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

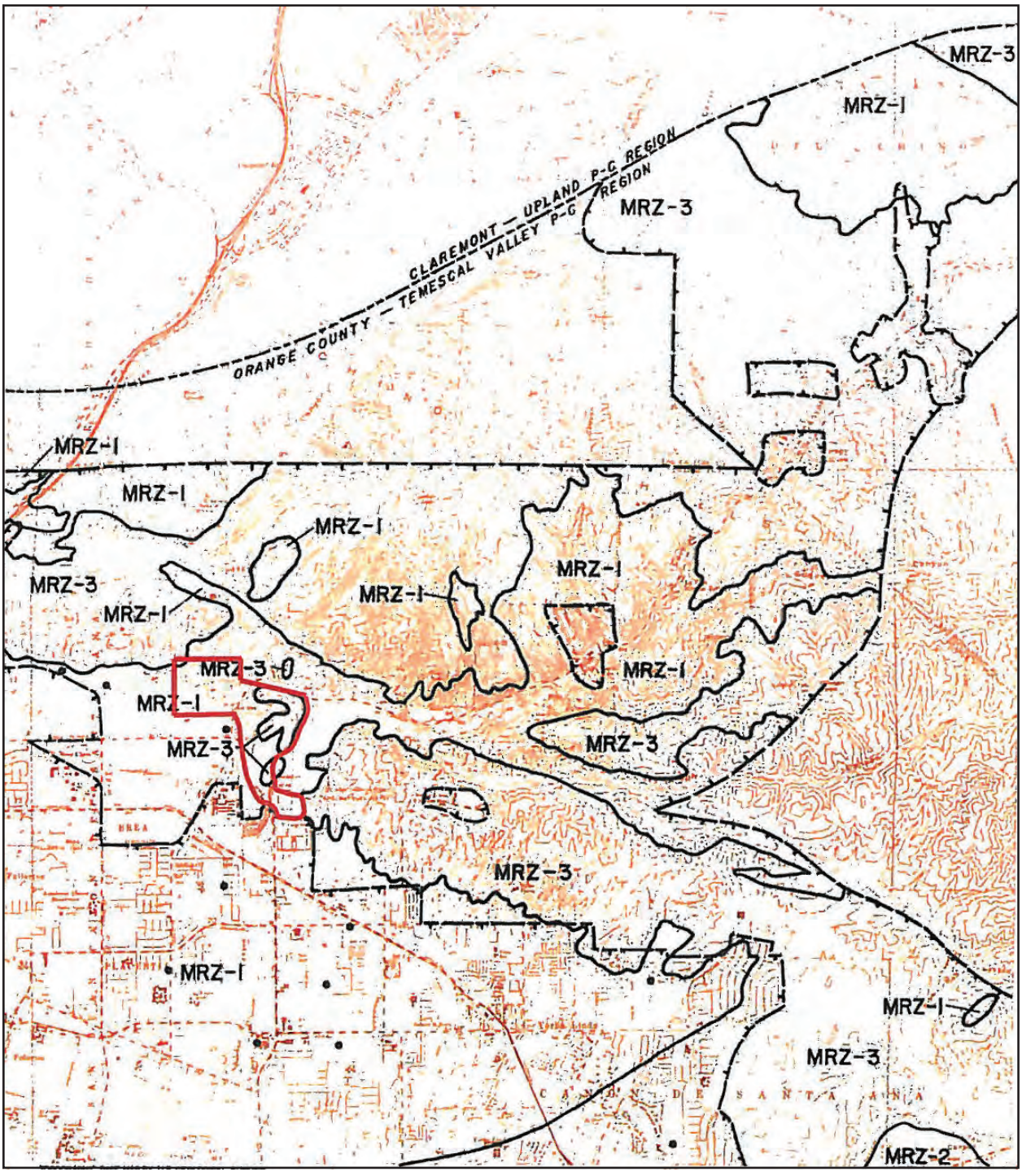
M-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.12.3 Plans, Programs, and Policies

No plans, programs, and policies are applicable.

Figure 5.12-1 - Mineral Resource Zone Map

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MRZ-1 A Mineral Resource Zone where adequate information indicates that no significant mineral deposits are present or likely to be present.

MRZ-2 A Mineral Resource Zone where adequate information indicates that significant mineral deposits are present, or a likelihood of their presence and development should be controlled.

MRZ-3 A Mineral Resource Zone where the significance of mineral deposits cannot be determined from the available data.

MRZ-4 A Mineral Resource Zone where there is insufficient data to assign any other MRZ designation.

Specific Plan Boundary

0 1
Scale (Miles)

Source: Alta, 2018

5. Environmental Analysis
MINERAL RESOURCES

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5.12.4 Environmental Impacts

5.12.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.12-1: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. [Threshold M-1]

The project site is an active oil operations site owned by Aera Energy, with the exception of the southern agricultural area. However, as shown in Figure 5.12-1, the majority of project site is in MRZ-1, and a few areas on the eastern side of the project site are in MRZ-3. The project site has been operating as oil fields for about 100 years, and no known nonfuel mineral resources have been identified within this area that would be of value to the region and the residences of the state, as defined by SMARA. Therefore, although further investigation could uncover mineral resources and result in the reclassification into other categories, it has not been found that the project site contains economically significant and viable nonfuel mineral deposits. Additionally, implementation of the proposed project would not preclude future identification and mining of aggregate deposits if future investigation based on economic-geologic principals finds that the likelihood for occurrence of significant mineral deposits exists. The proposed project would not deplete or modify the availability of a known mineral resources that would be of value to the region and the residents of the state. Project impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.12-2: The proposed project would not 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. [Threshold M-2]

The City of Brea does not designate any locally important mineral resource recovery site in its general plan or other land use plan. The Orange County General Plan does not identify the project site as a mineral resource area in Figure VI-3, Orange County Mineral Resources. Therefore, no locally important mineral resource recovery site delineated on Brea's General Plan or other applicable land use plan would be impacted by the proposed project.

Level of Significance Before Mitigation: No impact.

5.12.5 Cumulative Impacts

Implementation of the proposed project, along with other cumulative projects identified in Table 4-1, *Related Cumulative Projects*, would not result in cumulatively significant impacts to known mineral resources or mineral resources recovery sites. Brea contains areas of MRZ-1 and MRZ-3, and no known mineral resources sites that are value to the region and the residents of the state are identified in the cumulative projects' sites (CGS 2019). There is no locally important mineral resource recovery site delineated in Brea's General Plan.

Implementation of the proposed project and the cumulative projects in Brea would not result in significant mineral resources impacts, individually or cumulatively.

5.12.6 Level of Significance Before Mitigation

The following impacts would be less than significant: 5.12-1 and 5.12-2.

5.12.7 Mitigation Measures

No mitigation measures are required.

5.12.8 Level of Significance After Mitigation

No significant impacts associated with mineral resources have been identified. No significant unavoidable adverse impacts relating to mineral resources are anticipated.

5.12.9 References

Alta California, Geotechnical Inc. (Alta). 2018, December 19. EIR-Level Geotechnical Assessment, Brea Central Property, City of Brea, County of Los Angeles.

California Department of Conservation, California Geological Survey (CGS). 2019, July (accessed). Mineral Lands Classification. CGS Information Warehouse: Mineral Land Classification. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc.

Miller, R.V. 1994. Generalized Mineral Land Classification of Orange County, California (Aggregate Resources Only).

5.13 NOISE

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Brea 265 Specific Plan to result in noise impacts in the City of Brea. 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 and vibration impacts associated with the proposed plan; and provides mitigation to reduce noise impacts at sensitive receptor locations. This evaluation uses procedures and methodologies as specified by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) and is based in part on the noise modeling data in Appendix L of this DEIR.

5.13.1 Environmental Setting

Noise and Vibration Fundamentals

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." The following are brief definitions of terminology used in this section:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the Leq metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L50 level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L10 level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L90 is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Day-Night Sound Level (Ldn or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 pm to 10:00 pm and 10 dB from 10:00 pm to 7:00 am. For general community/environmental noise, CNEL and Ldn values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive, that is, higher than the Ldn value). As a matter of practice, Ldn and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1x10-6 in/sec).

Sound Fundamentals

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Sound Measurement

Sound pressure is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, while 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dBA. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dBA for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8, and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. These "L" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, an artificial dB increment is added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (Ldn). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 pm to 10:00 pm, and 10 dBA for the hours from 10:00 pm to 7:00 am. The Ldn descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 pm and 10:00 pm. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher).

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling

sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. Table 5.13-1 shows typical noise levels from familiar noise sources.

Table 5.13-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2013.

Vibration Fundamentals

Vibration is an oscillating motion in the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard. Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal, and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS (typically expressed in VdB) for potential annoyance. The units for PPV are normally inches per second (in/sec). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration.

The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

5.13.1.1 REGULATORY BACKGROUND

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, and municipalities in the state have established standards and ordinances to control noise.

Federal

US Department of Housing and Urban Development

The US Department of Housing and Urban Development (HUD) has set a goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed under HUD funding. (This level is also generally accepted in California.) Though HUD does not specify acceptable interior noise levels, residential dwellings constructed under Title 24 standards typically provide in excess of 20 dBA of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

State

California Building Code

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

Residential structures within 60 dBA L_{dn}/CNEL noise contours require an acoustical analysis showing that the structure has been designed to limit intruding noise to the prescribed allowable levels. To comply with these regulations, applicants of new residential projects are required to submit an acoustical report in areas where

noise and land use compatibility is a concern. The report is required to analyze exterior noise sources affecting the proposed dwelling site; predicted noise spectra at the exterior of the proposed dwelling structure, considering present and future land usage; basis for the prediction (measured or obtained from published data); noise attenuation measures to be applied; and an analysis of the noise insulation effectiveness of the proposed construction, showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be inoperable or closed, the design for the structure must also specify the means that will provide ventilation and cooling, if necessary, to provide a habitable interior environment.

The State of California's noise insulation standards for nonresidential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards Code (CALGreen). CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$.

General Plan Guidelines

The State of California, through its general plan guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in CNEL. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can proceed with no special noise reduction requirements. Local municipalities adopt these compatibility standards as part of their general plans and modify them as appropriate for their local environmental settings. The City of Brea standards are discussed below.

Local Noise Standards

City of Brea General Plan

The Public Safety chapter of the City of Brea General Plan includes noise goals and policies that aim to minimize the impact of noise sources in the city. The relevant noise goals and policies are listed here.

Goal PS-9: Minimize the impact of point source noise and ambient noise levels throughout the community.

- **Policy PS-9.1.** Evaluate the need to require acoustical studies for development proposals that address both direct and indirect, particularly traffic, noise impacts, and require such studies, with appropriate mitigation included, as warranted.

- **Policy PS-9.3.** Ensure that acceptable noise levels are maintained near schools, hospitals, convalescent homes, and other noise sensitive areas in accordance with the City's Municipal Code and noise standards contained in the General Plan.

- **Policy PS-9.5.** Avoid placing high-noise activity centers near residential areas.

Goal PS-2: Minimize the impacts of transportation-related noise.

- **Policy PS-2.1.** Reduce transportation noise by imposing traffic restrictions where necessary.

Goal PS-3: Minimize noise impacts from sources other than transportation.

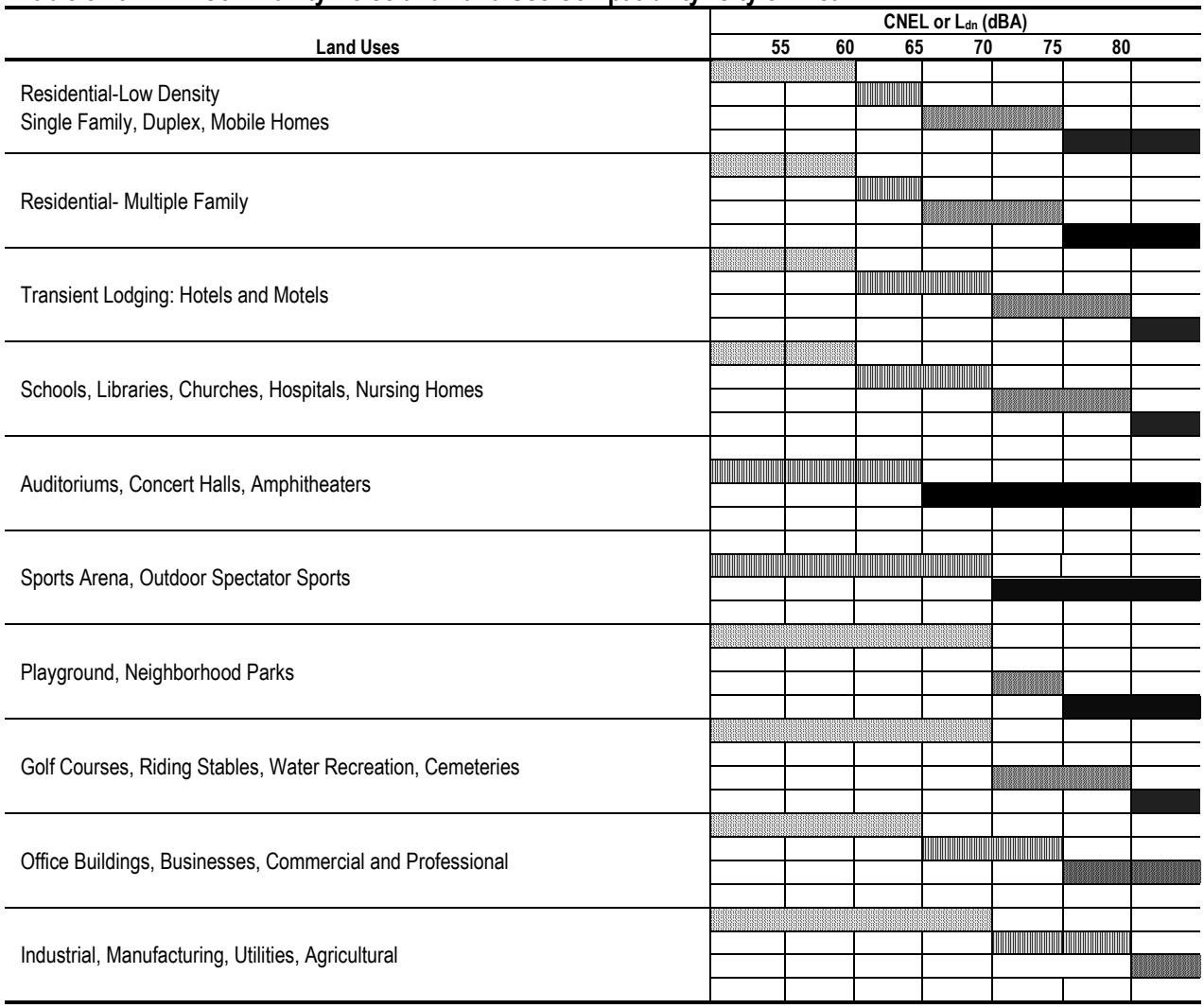
- **Policy PS-3.1.** Require the inclusion of noise mitigation measures, techniques, and design features in the planning, design, and construction of future development and redevelopment projects.

- **Policy PS-3.3.** Minimize stationary noise sources and noise emanating from construction activities and special events.

The City of Brea's primary goal is to minimize the exposure of residents to unhealthy and excessive noise levels. The City has adopted noise and land use compatibility guidelines, shown in Table 5.13-2, *Noise and Land Use Compatibility: City of Brea.*

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NOISE

Table 5.13-2 Community Noise and Land Use Compatibility: City of Brea



Explanatory Notes

Normally Acceptable:
Specified land use is satisfactory, based on the assumption that any buildings are of normal conventional construction, without any special noise insulation requirements

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

Clearly Unacceptable:
New construction or development should generally not be undertaken.

Source: City of Brea General Plan.

City of Brea Municipal Code

City of Brea Municipal Code Chapter 8.20, Noise Control, provides exterior standards for all Zone 1 residential properties. Table 5.13-3 summarizes allowable noise levels at the receiving property lines of residences. According to Municipal Code Section 8.20.090, the noise standards also apply to schools, hospitals, and churches while they are in use.

Table 5.13-3 City of Brea Exterior Noise Standards

Zone 1	Time Period	Exterior Noise Level, dBA				
		L_{50} [1]	L_{25} [2]	L_8 [3]	L_2 [3]	L_{max} [5]
Residential Daytime	7:00 am–10:00 pm	55	60	65	70	75
Residential Nighttime	10:00 pm–7:00 am	50	55	60	65	70

Source: City of Brea Municipal Code, Section 8.20.050, Exterior Noise Standards.
Notes: A 5 dBA penalty shall be applied in the event of an alleged offensive noise such as impact noise, simple tones, speech, music, or any combination thereof.
The standards are based on the following:
[1] The noise standard for a cumulative period of more than 30 minutes in any hour.
[2] The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour.
[3] The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour.
[4] The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour.
[5] The noise standard plus 20 dBA for any period of time.

Under Municipal Code Section 8.20.070, Special Provisions, the following are exempt from the provisions of the municipal code:

- Noise associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 7:00 pm and 7:00 am on weekdays, including Saturday, or at any time on Sunday or a federal holiday.
- Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a City permit.
- Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.
- Noise sources associates with the maintenance of real property, provided the activities take place between 7:00 am and 7:00 pm.

Municipal Code Section 20.20.040, limits ground vibration to no more than 0.003 inch/second (in/sec). This criterion is equivalent to approximately 70 VdB (root-mean-square vibration decibel level).

5.13.1.2 EXISTING CONDITIONS

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. Sensitive receptors include residences, senior housing, schools, hospitals, places of worship, and recreational areas. These uses are regarded as sensitive

because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, working from home, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not particularly sensitive to noise or vibration. The Brea 265 Specific Plan is a 262.1-acre area bordered by Lambert Road/Carbon Canyon Road to the north, Blake Road and residential uses to the south, Carbon Canyon Regional Park to the east, and residential uses and Valencia Avenue and Rose Drive to the west. The project site is near or adjacent to sensitive receptors—existing residential in all directions, the Brea Sports Park and Olinda Elementary School north of Birch Street, and the Carbon Canyon Regional Park east of the project site.

Ambient Noise Measurements

To determine an existing baseline throughout the project site, ambient noise monitoring was conducted by PlaceWorks. Six short-term measurements (15 minutes) were conducted Wednesday, March 13, 2019, during the morning commute hours of 7:00 am to 10:00 am, and three long-term measurements (48 hours) were conducted Wednesday, March 13, 2019, through Friday, March 15, 2019. The primary noise source at the measurement locations was vehicle traffic. Secondary noise sources varied by site, as described below.

Meteorological conditions during the measurement period were favorable for outdoor sound measurements and were noted to represent typical conditions for the season. Generally, conditions included clear skies with morning temperatures of 50 degrees Fahrenheit (°F) and average wind speeds of 1.5 miles per hour. Temperatures increased throughout the morning during short-term monitoring and measured up to 66 degrees Fahrenheit (°F). All sound level meters were equipped with a windscreen during measurements.

All sound level meters used for noise monitoring satisfy the American National Standards Institute (ANSI) standard for Type 1 instrumentation.[1] The sound level meters were set to "slow" response and "A" weighting (dBA). The meters were calibrated prior to and after the monitoring period. All measurements were at least five feet above the ground and away from reflective surfaces. Noise measurement locations are described below and shown in Figure 5.13-1, *Approximate Noise Monitoring Locations.*

[1] Monitoring of ambient noise was performed using Larson-Davis model LxT and 820 sound level meters.

Figure 5.13-1 - Approximate Noise Monitoring Locations



Specific Plan Boundary

ST-1 Short-Term Noise Measurement Locations (6)

LT-1 Long-Term Noise Measurement Locations (3)

0 1,000
Scale (Feet)

Source: Google Earth Pro, 2019

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The following describes individual noise monitoring locations and observations made during measurements.

- **Long-Term Location 1 (LT-1)** was off Valencia Avenue, approximately 250 feet north of Carbon Canyon Road and approximately 40 feet east of the nearest northbound travel lane centerline. A 48-hour noise measurement was conducted, beginning at 12:00 noon on Wednesday, March 13, 2019. The noise environment of this location is characterized primarily by roadway traffic on Valencia Avenue. Valencia Avenue north of Carbon Canyon Road experiences heavy-duty truck traffic en route to the Olinda Landfill. Noise from dump trucks and semitrailers were noticeably higher than other roadway vehicle traffic.

- **Long-Term Location 2 (LT-2)** was off Carbon Canyon Road, west of Olinda Ranch Neighborhood Park, approximately 0.25 mile east of Valencia Road and approximately 35 feet north of the nearest westbound travel lane centerline. A 48-hour noise measurement was conducted, beginning at 12:00 noon on Wednesday, March 13, 2019. The noise environment of this location is characterized primarily by roadway traffic on Carbon Canyon Road.

- **Long-Term Location 3 (LT-3)** was off North Rose Drive, approximately 0.15 mile northwest of Vesuvius Drive and approximately 30 feet southwest of the nearest southbound travel lane centerline. A 48-hour noise measurement was conducted, beginning at 1:00 pm on Wednesday, March 13, 2019. The noise environment of this location is characterized primarily by roadway traffic on North Rose Drive.

- **Short-Term Location 1 (ST-1)** was adjacent to 3186 East Piru Lane in a vacant lot north of East Lambert Road. A 15-minute noise measurement was conducted beginning at 7:10 am on Wednesday March 13, 2019. The noise environment is characterized primarily by roadway traffic on East Lambert Road and bird calls. Background noise levels in the absence of traffic flow and bird calls measured at 52 dBA. Traffic noise levels generally ranged from 56 to 64 dBA, and bird calls were noted to be 53 to 54 dBA.

- **Short-Term Location 2 (ST-2)** was off East Lambert Road, approximately 550 feet east of Sunflower Street and 50 feet north of the nearest westbound travel lane centerline. A 15-minute noise measurement was conducted beginning at 7:38 am on Wednesday, March 13, 2019. The noise environment is characterized primarily by roadway traffic on East Lambert Road. Background noise levels ranged between 52 to 54 dBA in the absence of roadway traffic. Traffic noise levels were generally 70 to 82 dBA.

- **Short-Term Location 3 (ST-3)** was in front of 120 South Flower Hill Street. A 15-minute noise measurement was conducted beginning at 8:07 am on Wednesday, March 13, 2019. The noise environment is characterized primarily by aircraft overflights, birds, and neighborhood activities such as car doors shutting. Light vehicle pass-bys also contribute to the ambient noise environment. Background noise levels ranged from 46 to 47 dBA. Aircraft overflights were generally 53 dBA, vehicles pass-bys were 56 dBA, and birds were 50 to 52 dBA.

- **Short-Term Location 4 (ST-4)** was in front of Olinda Elementary School off East Birch Street, approximately 150 feet west of Voyager Avenue and 20 feet north of the nearest westbound travel lane centerline. A 15-minute noise measurement was conducted beginning at 8:35 am on Wednesday, March 13,

2019. The noise environment is characterized primarily by roadway traffic from East Birch Street. Background noise levels were generally 51 dBA, and traffic flow ranged from 74 to 79 dBA.

- **Short-Term Location 5 (ST-5)** was at Brea Sports Park in the courtyard between the soccer field and baseball field. A 15-minute noise measurement was conducted beginning at 9:03 am on Wednesday, March 13, 2019. The noise environment is characterized primarily by traffic noise from East Birch Street and birds. Background noise levels were generally 48 dBA. Traffic noise was generally 60 to 62 dBA, and birds were 52 dBA.

- **Short-Term Location 6 (ST-6)** was conducted across from 3664 Azalea Way, approximately 20 feet south of the nearest eastbound travel lane centerline. A 15-minute noise measurement was conducted beginning at 9:38 am. The noise environment is characterized primarily by distant construction activity for new housing development along Camelia Lane, minimal vehicle pass-bys, and aircraft overflights. Background noise levels generally ranged from 36 to 38 dBA. Vehicle pass-bys were generally 55 to 61 dBA, distant construction was 41 to 43 dBA, and aircraft overflights were 45 to 65 dBA.

Ambient Noise Results

During the ambient noise survey, the noise levels at monitoring locations ranged from 72 to 76 dBA CNEL. The long-term noise measurement results are summarized in Table 5.13-4, *Long-Term Noise Measurement Levels*. A summary of the daily trend during long-term noise measurements is provided in Appendix L. The short-term noise measurement results are summarized in Table 5.13-5, *Short-Term Noise Measurement Levels*.

Table 5.13-4 Long-Term Noise Measurement Levels (dBA)

Monitoring Location	Description	CNEL	Lowest $L_{eq, 1\text{-}hr}$	Highest $L_{eq, 1\text{-}hr}$
LT-1	Valencia Avenue: Approximately 40 feet east of nearest NB travel lane CL	72	50.1	74.5
LT-2	Carbon Canyon Road: Approximately 35 feet north of nearest WB travel lane CL	76	57.3	74.5
LT-3	North Rose Drive: Approximately 30 feet southwest of nearest SB travel lane CL	74	54.7	77.2

Notes: Noise monitoring conducted between March 13, 2019, and March 15, 2019.
NB = northbound
WB = westbound
SB = southbound
CL = centerline

Table 5.13-5 Short-Term Noise Measurement Levels (dBA)

Monitoring Site	L_{eq}	L_{max}	L_{min}	L_2	L_8	L_{25}	L_{50}
ST-1, 03/13/19	56.6	64.7	50.1	59.6	58.8	57.6	56.3
ST-2, 03/13/19	71.9	83.9	52.3	77.9	75.1	72.9	70.5
ST-3, 03/13/19	50.0	59.3	46.1	55.1	52.7	50.3	48.8
ST-4, 03/13/19	70.8	81.2	50.9	78.8	76.2	71.5	65.9
ST-5, 03/13/19	53.5	63.2	47.4	59.7	56.4	53.6	52.2
ST-6, 03/13/19	49.0	65.1	36.2	60.1	52.3	43.0	39.7

Note: Noise monitoring conducted on March 13, 2019, during the hours of 7:00 am–10:00 am.

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 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.

5.13.2.1 CONSTRUCTION NOISE THRESHOLDS

The City of Brea does not have an established noise threshold for construction noise. The FTA provides criteria for acceptable construction noise levels and recommends a daytime noise threshold of 80 dBA $L_{eq(8hr)}$. For the purposes of this analysis, the FTA criterion is used for nearby sensitive receptors.

5.13.2.2 TRANSPORTATION NOISE THRESHOLDS

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels at adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually undetectable. A change of 5 dBA is readily audible to most people in an exterior environment. Based on the noise standards from Table 5.13-2, noise levels above 65 dBA CNEL are normally unacceptable at sensitive receptor locations such as residences, and noise environments in these areas would be considered degraded. Based on this, the following thresholds of significance are used to assess traffic noise impacts at sensitive receptor locations:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA CNEL and higher.
- Greater than 3 dBA increase for ambient noise environments of 60 to 64 CNEL.

- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA CNEL.

5.13.2.3 STATIONARY NOISE THRESHOLDS

As discussed in Section 5.13.1.2, *Regulatory Background*, the City's noise ordinance establishes exterior noise levels at receiving residential property lines. According to Section 8.20.090, the noise standards also apply to schools, hospitals, and churches while they are in use. These exterior noise standards are used as stationary source thresholds for projects under the Specific Plan.

5.13.2.4 VIBRATION THRESHOLDS

Vibration Annoyance

The City of Brea establishes a vibration threshold of 0.003 in/sec (root-mean-square). This threshold is equivalent to 70 VdB, which is used for this analysis.

Architectural Damage

The City of Brea does not have specific limits or thresholds for vibration-induced architectural damage related to construction activities. The FTA provides criteria for acceptable levels of groundborne vibration for various types of buildings, which are used for this analysis. These criteria are shown in Table 5.13-6, *Groundborne Vibration Criteria: Architectural Damage*.

Table 5.13-6 Groundborne Vibration Criteria: Architectural Damage

Building Category		PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Nonengineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018.
PPV = peak particle velocity

The Category III threshold of 0.2 in/sec PPV for nonengineered timber and masonry buildings would apply to surrounding residential structures.

5.13.3 Plans, Programs, and Policies

Regulatory Requirements

PPP N-1 Residential development must comply with the CBC, Title 24, Part 2, Volume 1, Chapter 12, Interior Environment, Section 1207.11.2, Allowable Interior Noise Levels.

PPP N-2 Nonresidential development must comply with the CBC, Title 24, Building Standards Administrative Code, Part 11, CALGreen.

PPP N-3 The project will be constructed in accordance with Section 8.20, Noise Control, of Brea's Municipal Code, which generally prohibits construction, repair, remodeling, or grading of any real property between the hours of 7:00 pm and 7:00 am on weekdays and Saturday, or at any time on Sunday or a federal holiday.

PPP N-4 Project stationary sources will comply with the City of Brea's exterior noise standards in Section 8.20.050 of the Municipal Code (see Table 5.13-3).

PPP N-5 Project vibration levels will comply with the City of Brea's vibration standard of 0.003 in/sec root-mean-square (equivalent to 70 VdB) in Section 20.20.040 of the Municipal Code.

5.13.4 Environmental Impacts

5.13.4.1 METHODOLOGY

This section analyzes impacts related to short-term construction noise and vibration, as well as operational noise and vibration due to buildout of the Specific Plan. Noise increases from vehicular traffic were assessed using a version of the FHWA Traffic Noise Prediction Model and the traffic forecasts used in the Traffic Study (see Appendix N).

As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects, it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 (No. S 213478), December 17, 2015. As a result, while the noise from existing sources is taken into account as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility of a future project as a result of Specific Plan buildout is typically no longer a required topic for impact evaluation under CEQA. Generally, no determination of significance is required with the exception of certain school projects, projects affected by airport noise, and projects that would exacerbate existing conditions (i.e., projects that would have a significant operational impact). As required by the CBC, Title 24, and the General Plan's noise policies, noise levels will be considered in land use planning decisions to prevent future noise and land use incompatibilities. At the discretion of the City of Brea Building Division, a project applicant may be required to obtain a detailed acoustical report outlining any necessary noise reduction features in the final design to comply with City and CBC provisions for indoor and outdoor noise levels.

5.13.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.13-1: Construction activities would result in temporary noise increases in the vicinity of the project site that could exceed standards. [Threshold N-1]

The Brea 265 Specific Plan would implement the objectives described in Chapter 3, *Project Description*, and result in development of the project site. The Specific Plan proposes to construct a residential community of

detached, attached, and multifamily residential neighborhoods, open space, and parks and recreational amenities linked by an extensive trial network.

Two types of temporary noise impacts could occur during construction. First, the transport of workers and movement of materials to and from the site could incrementally increase noise levels along local access roads. The second type of temporary noise impact is related to construction activities during the implementation of the proposed project. Construction is performed in distinct steps, each of which has its own mix of equipment, and, consequently, its own noise characteristics. Table 5.13-7, *Construction Equipment Noise Emission Levels*, lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet from the equipment.

Table 5.13-7 Construction Equipment Noise Emission Levels

Construction Equipment	Typical Noise Levels at 50 feet, dBA
Air Compressor	80
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	80
Paver	85
Pile-Driver (Impact)	101
Pile-Driver (Sonic)	95
Pneumatic Tool	85
Pump	77
Rail Saw	90
Rock Drill	85
Roller	85

Table 5.13-7 Construction Equipment Noise Emission Levels

Construction Equipment	Typical Noise Levels at 50 feet, dBA
Saw	76
Scarifier	83
Scraper	85
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	84

Source: FTA 2018.

As shown in Table 5.13-7, construction equipment generates high levels of noise, generally ranging from 76 dBA to 101 dBA at a distance of 50 feet. Construction of developments associated with the implementation of the Specific Plan would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive receptors in the vicinity of an individual project.

Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each phase of construction involves different types of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced during each construction phase is determined by combining the L_{eq} contributions from each piece of equipment used at a given time, while accounting for the ongoing time variations of noise emissions (commonly referred to as the usage factor). Overall noise emissions vary considerably, depending on the specific activity being performed at any given moment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site and would have different loads and power requirements.

Because specific project-level information is not yet available, it is not possible to quantify the estimated construction noise levels at specific sensitive receptors due to a given project under the Specific Plan. In most cases, construction of individual developments associated with implementation of the Specific Plan would temporarily increase the environment's ambient noise in the vicinity of each individual project, potentially affecting existing and future nearby sensitive uses, such as residences, outdoor recreational areas and park, and

Olinda Elementary School. Although it is not anticipated at this time that pile driving would be necessary for projects under the Specific Plan, if condition changes in the future, pile driving could be necessary. Construction noise could potentially exceed the FTA 80 dBA L_{eq} threshold.

Level of Significance Before Mitigation: Potentially significant.

Impact 5.13-2 Implementation of the proposed project would result in long-term operation-related noise that would not exceed standards. [Threshold N-1]

Mobile Source Noise

As discussed above, traffic noise increases were calculated using a version of the FHWA's Traffic Noise Prediction Model based on existing and future traffic volumes and vehicle mix (auto, medium-duty trucks, and heavy-duty trucks) provided by the project traffic consultant (LLG 2022). The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic volumes, vehicle speeds, vehicle mix, time of day splits, and number of lanes. Table 5.13-8, *Project-Related Increase in Traffic Noise*, shows the existing and future predicted noise levels at 50 feet from the nearest travel centerline, as well as the predicted traffic noise increase with implementation of the Specific Plan. Appendix L of the DEIR contains the traffic noise modeling inputs and outputs.

As shown in Table 5.13-8, there are no roadway segments that would experience a traffic noise increase of greater than 1.5 dBA CNEL with buildout of the Specific Plan. The highest traffic noise increase is predicted to be 1.5 dBA CNEL along Lambert Road between Valencia Avenue and Kraemer Boulevard. Therefore, traffic noise impacts due to buildout of the Specific Plan would be less than significant.

Table 5.13-8 Project-Related Increase in Traffic Noise

	Average Daily Traffic Volumes			dBA CNEL at 50 Feet			Buildout Noise Increase, CNEL
Roadway Segment	Existing	2045 Without Project	2045 With Project	Existing	2045 Without Project	2045 With Project	
Lambert Road, east of State College Boulevard	60,748	79,604	80,451	76.5	77.7	77.8	1.2
Lambert Road, west of Pointe Drive	45,297	55,675	58,220	75.2	76.1	76.3	1.1
Lambert Road, east of Associated Road	34,533	42,374	44,931	76.2	77.1	77.4	1.1
Lambert Road, west of Santa Fe Road/Kraemer Boulevard	34,067	41,750	44,307	76.2	77.1	77.3	1.1
Lambert Road, east of Kraemer Boulevard	20,241	24,831	28,343	73.8	74.7	75.3	1.5
Lambert Road, west of Valencia Avenue	19,822	24,210	28,231	73.7	74.5	75.2	1.5
Carbon Canyon Road, east of Santa Fe Road	20,709	27,326	27,795	72.8	74.0	74.1	1.3
Kraemer Boulevard, south of Lambert Road	17,067	20,065	21,299	71.9	72.6	72.9	1.0

Table 5.13-8 Project-Related Increase in Traffic Noise

Roadway Segment	Average Daily Traffic Volumes			dBA CNEL at 50 Feet			Buildout Noise Increase, CNEL
	Existing	2045 Without Project	2045 With Project	Existing	2045 Without Project	2045 With Project	
Valencia Avenue, south of Lambert Road	25,503	27,943	31,322	73.7	74.1	74.6	0.9
Birch Street, east of State College Boulevard	25,204	31,685	32,224	73.7	74.7	74.7	1.1
Birch Street, east of S Associated Road	24,697	30,325	31,180	73.6	74.5	74.6	1.0
Birch Street, east of N Associated Road	21,141	26,047	26,902	73.9	74.9	75.0	1.0
Birch Street, east of Kraemer Boulevard	16,994	20,699	21,895	73.0	73.9	74.1	1.1
Kraemer Boulevard, south of Birch Street	20,279	24,038	24,890	73.9	74.7	74.8	0.9
Valencia Avenue, south of Birch Street/Rose Drive	13,142	15,387	17,101	72.9	73.6	74.1	1.1
Rose Drive, east of Valencia Avenue	20,986	24,472	27,848	70.5	71.2	71.7	1.2
Rose Drive, north of Imperial Highway	20,338	23,187	25,813	71.6	72.2	72.7	1.0
Imperial Highway, east of State College Boulevard	73,409	92,779	92,992	77.4	78.4	78.4	1.0
Imperial Highway, east of SR-57 NB Ramps	54,650	68,783	69,334	78.2	79.2	79.3	1.0
Imperial Highway, east of Associated Road	52,514	65,621	66,213	78.1	79.0	79.1	1.0
Imperial Highway, east of Castlegate Lane/Placentia Avenue	52,689	66,369	67,106	78.1	79.1	79.1	1.1
Imperial Highway, east of Kraemer Boulevard	45,608	56,325	57,311	78.0	78.9	79.0	1.0
Imperial Highway, east of Valencia Avenue	46,275	56,862	57,435	77.4	78.3	78.4	0.9
Kraemer Boulevard, south of Imperial Highway	20,280	24,282	25,022	72.7	73.5	73.6	0.9
Valencia Avenue, south of Imperial Highway	10,142	12,407	13,084	67.4	68.3	68.5	1.1

Source: Traffic data provided by Linscott, Law & Greenspan, 2022. Traffic noise modeled using the FHWA Traffic Noise Prediction Model methodology.

Stationary Source Noise

Stationary noise sources can be generated from residential development, such as heating and cooling mechanical systems (HVAC), human activity in open spaces and parks, and landscaping maintenance. In Section 8.20.070 of the Municipal Code, noise associated with activities conducted on any public park or playground is exempt from the City's exterior noise standards. Noise sources associated with the maintenance of real property, provided it takes place between 7:00 am and 7:00 pm, are also exempt. In PPP N-5, mechanical equipment such

as HVAC systems, as part of future projects under the Specific Plan, would be required to comply with the noise level standards in the City's Municipal Code Section 8.20.050. This would be achieved through proper equipment selection, setbacks, enclosures, and/or parapet walls.

A 13-acre sports park would be provided immediately north of the existing Brea Sports Park. The sports park would provide a baseball field, tennis courts, soccer field, pickleball courts, a full basketball court, tartan track with fitness stations, innovative play area, shade structure, concession stand (approx. 900 square feet), restrooms with drinking fountain and bike racks, team warmup field, and parking (approx. 134 spaces). Activities at the proposed sports park would be comparable to the existing Brea Sports Park and would not introduce new types of noise sources to the area. No permanent P.A. systems are proposed as part of the sports park. In addition, Section 8.20.070 of the Brea Municipal Code exempts activities conducted on public parks and playgrounds from the code noise standards.

Level of significance Before Mitigation: Less than significant.

Impact 5.13-3: Construction during plan buildout would generate construction vibration that could exceed standards. [Threshold N-2]

Construction Vibration Impacts

Construction activity at project sites in the Specific Plan would generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers (FTA 2018). Table 5.13-9, *Vibration Levels for Construction Equipment*, lists reference vibration levels for construction equipment.

Table 5.13-9 Vibration Levels for Construction Equipment

Equipment	Approximate RMS Vibration Level at 25 Feet (VdB)	Approximate PPV Vibration Level at 25 Feet (in/sec)
Pile Driver, Impact (Upper Range)	112	1.518
Pile Driver, Impact (Typical)	104	0.644
Pile Driver, Sonic (Upper Range)	105	0.734
Pile Driver, Sonic (Typical)	93	0.170
Vibratory Roller	94	0.210
Large Bulldozer	87	0.089
Caisson Drilling	87	0.089
Loaded Trucks	86	0.076
Jackhammer	79	0.035
Small Bulldozer	58	0.003

Source: FTA 2018.
Notes: RMS = root-mean-square, PPV = peak particle velocity.

As shown in Table 5.13-9, vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the City criteria for human annoyance of 70 VdB and FTA architectural damage thresholds shown in Table 5.13-6 (e.g., 0.2 in/sec PPV for nonengineered timber and masonry buildings such as most residences). Construction details and equipment for future, project-level developments under the Specific Plan are not known at this time but may cause vibration impacts. It is not anticipated, however, that pile driving would be necessary for projects under the Specific Plan. Nevertheless, this would be a potentially significant impact.

Operational Vibration Impacts

The Specific Plan proposes residential developments, including single-family detached, single-family attached, and multifamily housing. In addition to residential land uses, the Specific Plan proposes nonresidential land uses such as park/recreation areas, open space, and a network of trails. These proposed land uses would not be associated with substantial operational vibration, and therefore this impact would be less than significant.

Level of significance Before Mitigation: Potentially significant.

Impact 5.13-4: The proximity of the project site to an airport or airstrip would not result in exposure of future residents and workers to excessive airport-related noise. [Threshold N-3]

The nearest airport or private airstrip is Fullerton Municipal Airport, approximately eight miles southwest of the project site. Future residents and workers would not be exposed to excessive aircraft noise.

Level of Significance Before Mitigation: No impact.

5.13.5 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.13-2 and 5.13-4.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.13-1** Construction activities associated with buildout of the proposed project would result in a temporary increase in noise levels at sensitive receptors.
- **Impact 5.13-3** Construction activities associated with buildout of the proposed project may expose sensitive uses to excessive levels of groundborne vibration.

5.13.6 Mitigation Measures

Impact 5.13-1

N-1 Prior to any construction activity such as grading, site preparation, or issuance of building permits, a note shall be provided on construction plans indicating that during construction activities and phasing the project applicant shall be responsible for requiring contractors to implement the following measures to limit construction-related noise to a performance standard of 80 dBA L_{eq} at the property line of the nearest sensitive receptor:

- Section 8.20.070 of the Brea Municipal Code limits construction activity to the daytime hours between 7:00 am to 7:00 pm on Monday through Saturday. Construction is not allowed on Sundays and federal holidays. If construction outside of these hours is necessary for construction of a project under the Specific Plan, construction noise shall be limited to the City of Brea exterior noise standards summarized in Table 5.13-3, *City of Brea Exterior Noise Standards*.
- During the entire active construction period, equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.
- Require that impact tools (e.g., jack hammers and hoe rams) be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.
- Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors.
- Construction traffic shall be limited—to the extent feasible—to approved haul routes established by the City.
- At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction

days and hours as well as the telephone numbers of the City's and contractor's authorized representatives to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.

- Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes.

- During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.

- Erect temporary noise barriers, where feasible, when construction noise is predicted to exceed the noise standards after other measures have been considered, or occur at nighttime, or when the anticipated construction duration is greater than is typical (e.g., two years or more).

Impact 5.13-3

N-2 Prior to issuance of a building permit for a project requiring pile driving within 135 feet of fragile structures such as historical resources, within 100 feet of nonengineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster), or requiring a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds—e.g., 0.12 inch per second (in/sec) peak particle velocity (PPV) for fragile or historical resources, 0.2 in/sec PPV for nonengineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry—or the City threshold of 0.003 in/sec root-mean-square (70 vibration decibel [VdB]). If vibration levels would exceed this threshold, alternative uses such static rollers and drilling piles as opposed to pile driving shall be used.

5.13.7 Level of Significance After Mitigation

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

5.13.8 References

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Linscott Law & Greenspan. 2022, February. Traffic Impact Analysis, Brea 265 Specific Plan, Brea, California. DEIR Appendix N.

5.14 POPULATION AND HOUSING

This section of the Draft Environmental Impact Report (DEIR) examines the potential for socioeconomic impacts of the proposed Brea 265 Specific Plan on the City of Brea and its Sphere of Influence (SOI), including changes in population, employment, and demand for housing, particularly housing cost/rent ranges defined as "affordable."

5.14.1 Environmental Setting

5.14.1.1 REGULATORY BACKGROUND

Federal

The United States Bureau of the Census publishes population, household, and employment data gathered through the decennial census, which provides a record of historical growth rates in Orange County and the City of Brea. The most recent decennial census was in 2020, and these data are used, when available, for analysis in this section of the Draft EIR. Data from the 2000 Census were also used for historical reference in evaluating demographic trends.

State

California planning and zoning law requires each city and county to adopt a general plan for future growth (California Government Code Section 65300). This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. The Housing and Community Development Department (HCD) estimates the relative share of California's projected population growth that would occur in each county based on California Department of Finance population projections and historical growth trends. These figures are compiled by HCD in a Regional Housing Needs Assessment (RHNA) for each region of California. Where there is a regional council of governments, the HCD provides the RHNA to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares gives cities and counties the opportunity to comment on the proposed allocations. The HCD oversees the process to ensure that the council of governments distributes its share of the state's projected housing need.

California Housing Element laws require that each city and county identify and analyze existing and projected housing needs within its jurisdiction and prepare goals, policies, and programs to further the development, improvement, and preservation of housing for all economic segments of the community, commensurate with local housing needs (California Government Code Sections 65580 to 65589).

Housing Accountability Act

The Housing Accountability Act (HAA) requires that cities approve applications for residential development that are consistent with a city's general plan and zoning code development standards without reducing the proposed density. Examples of objective standards are those that are measurable and have clear criteria that are determined in advance, such as numerical setback, height limit, universal design, lot coverage requirement, or

parking requirement. Under the HAA, an applicant is entitled to the full density allowed by the zoning and/or general plan provided the project complies with all objective general plan, zoning, and subdivision standards and provided that the full density proposed does not result in a specific, adverse impact on public health and safety that cannot be mitigated in any other way.

Amendment to the Housing Accountability Act

Assembly Bill (AB) 678 amends the HAA by increasing the documentation and standard of proof required for a local agency to legally defend its denial of low-to-moderate-income housing development projects. If the local agency considers the housing development project to be inconsistent, not in compliance, or not in conformity, this bill requires the local agency to provide the applicant with written documentation within specified time periods that identifies the provision or provisions, and an explanation of the reason or reasons it considers the housing development to be inconsistent, not in compliance, or not in conformity. If the local agency fails to provide this documentation, the housing development project is deemed consistent, compliant, and in conformity with the applicable plan, program, policy, ordinance, standard, requirement, or other similar provision.

AB 1515: Reasonable Person Standard

AB 1515 specifies that a housing development project is deemed consistent, compliant, and in conformity with an applicable plan, program, policy, ordinance, standard, requirement, or other similar provision if there is substantial evidence that would allow a reasonable person to conclude that the housing development project or emergency shelter is consistent, compliant, or in conformity. This bill added additional findings related to the Housing Accountability Act in this regard.

Senate Bill 330: Housing Crisis Act of 2019

On October 9, 2019, Governor Newsom signed Senate Bill (SB) 330, allowing increased certainty in the development process, speeding the review of new housing development projects, preserving existing affordable housing, and preventing certain zoning actions that reduce the availability of housing. SB 330 establishes a statewide housing emergency until January 1, 2025.

Regional

Southern California Association of Governments

SCAG is a regional council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, which encompass over 38,000 square miles. SCAG is the federally recognized metropolitan planning organization (MPO) for this region and 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. As the southern California region's MPO, SCAG cooperates with the South Coast Air Quality Management District, the California Department of Transportation, and other agencies in preparing

regional planning documents. The City of Brea is within the Orange County Council of Governments' subregion of SCAG.

Regional Transportation Plan/Sustainable Community Strategy

SCAG has developed regional plans to achieve specific regional objectives. Every four years SCAG updates the regional transportation plan/sustainable community strategy (RTP/SCS) for the six-county region. On September 3, 2020, SCAG adopted the 2020-2045 RTP/SCS, Connect SoCal, which is based on four principles that are important to the region's future—mobility, economy, healthy/complete communities, and environment. Connect SoCal explicitly lays out goals related to housing, transportation technologies, equity, and resilience in order to adequately reflect the increasing importance of these topics in the region. The RTP/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 emissions from transportation (excluding good movement). The RTP/SCS is meant to provide growth strategies that would achieve the regional greenhouse gas emissions reduction targets identified by the California Air Resources Board. However, the RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the RTP/SCS; instead, it provides incentives to governments and developers for consistency.

Local

Development of housing in the City of Brea is guided by the goals, objectives, and policies of the general plan and housing element. The City of Brea General Plan includes the following policies on population and land use:

- **Policy 2.1. Financial Resources** – Pursue expanded financial resources to support in the production of housing affordable to Brea's workforce, disadvantaged communities, and special needs populations.
- **Policy 2.2. Mixed Income Housing** – Utilize the City's Inclusionary Housing Ordinance as a tool to integrate affordable units within market rate developments, or pay an in-lieu fee to support the provision of affordable housing.
- **Policy 2.3. Provide Homeownership Assistance** – Encourage the provision of financial assistance to low and moderate first-time homebuyers through County and State programs.
- **Policy 2.4. Housing for Workforce** – Promote the City's Affordable Housing Programs with employers in Brea.
- **Policy 2.5. Public/Private Partnerships** – Explore collaborative partnerships with major employers, educational institutions, non-profit organizations, and others in the provision of affordable, workforce and special needs housing.
- **Policy 3.6. Hillside Development** – Base densities in Brea's hillsides on the ability of infrastructure, ingress and egress for evacuations, landform, physical constraints, and emergency response capabilities to support development.

- **Policy 3.7. Annexations** – Pursue phased annexation of Brea's Sphere of Influence to provide additional growth opportunities for a range of housing types consistent with infrastructure capacities.
- **Policy 6.5. Transportation Alternatives and Walkability** – Incorporate transit and other transportation alternatives including walking and bicycling into the design of new development, particularly in areas within a half-mile of designated transit stops and the City's "Tracks at Brea" walking and biking trail system.
- **Policy 6.6. Jobs/Housing Balance** – Encourage a closer link between housing and jobs in the community, including housing opportunities affordable to Brea's modest income workforce.

5.14.1.2 EXISTING CONDITIONS

Population Growth Trends

As shown in Table 5.14-1, *Brea and Orange County Population Growth*, the city's population growth rate increased from a modest 7.7 percent between 1990 and 2000 to 16.2 percent between 2010 and 2020, more than doubling the rate. During the same period, the overall Orange County population rate decreased from 18.1 percent between 1990 and 2000 to 6.1 percent between 2010 and 2021.

Table 5.14-1 Brea and Orange County Population Growth

Jurisdiction	1990	2000	2010	2020	Growth Rate 1990-2000	Growth Rate 2000-2010	Growth Rate 2010-2021
Brea	32,873	35,410	39,282	45,629	7.7%	10.9%	16.2%
Orange County	2,410,556	2,846,289	3,010,232	3,194,332	18.1%	5.8%	6.1%

Source: US Census 1990, 2000, and 2010; DOF 2020.

Housing Growth Trends

Table 5.14-2, *Brea and Orange County Housing Growth*, indicates that between 1990 and 2000, the city's housing stock grew by a modest 5.4 percent, compared to 10.8 percent countywide. Since 2000, the city's housing growth rate has increased, to 10.9 percent between 2000 and 2010 and 14.4 percent between 2010 and 2021, and the countywide housing growth rate decreased to 7.9 percent between 2000 and 2010 and 6.2 percent between 2010 and 2021.

Table 5.14-2 Brea and Orange County Housing Growth

Jurisdiction	1990	2000	2010	2020	Growth Rate 1990-2000	Growth Rate 2000-2010	Growth Rate 2010-2021
Brea	12,648	13,327	14,785	16,911	5.4%	10.9%	14.4%
Orange County	875,072	969,484	1,046,118	1,111,421	10.8%	7.9%	6.2%

Source: US Census 1990, 2000, and 2010; DOF 2020.

Regional Housing Needs Assessment

As shown in Table 5.14-3, *City of Brea 2021-2029 Regional Housing Needs Assessment*, Brea's RHNA allocation for the 2021–2029 planning period is 2,365 units. This number was calculated by SCAG based on the city's share of the region's employment growth, migration and immigration trends, and birth rates. The RHNA allocation for the 2014-2021 planning period was 1,851 units, and as of February 23, 2021, the city issued 3,209 building permits in the 2014-2021 cycle.

Table 5.14-3 City of Brea 2021-2029 Regional Housing Needs Assessment

Income Category (% of County AMI[1])	Number of Units	Percentage
Extremely Low Income (30% or less)[2]	334	14%
Very Low (31% to 50%)	335	14%
Low (51% to 80%)	393	17%
Moderate (81% to 120%)	403	17%
Above Moderate (Over 120%)	900	38%
Total	**2,365**	**100%**

Source: SCAG 2021.
[1] AMI = Area Median Income
[2] An estimated half of the city's 669 very low income housing needs (334 units) are for extremely low income households earning less than 30% AMI.

Employment

Employment Trends

Table 5.14-4, *City of Brea Employment by Industry,* shows the city's distribution of jobs by industry type. As shown, finance and insurance (13.52 percent) and manufacturing (13.14 percent) are the most dominant employment sectors in Brea, followed by retail trade (11.20 percent), accommodation and food services (9.07 percent), and construction (8.60 percent). These industries make up approximately 55 percent of the city's employment.

Table 5.14-4 City of Brea Employment by Industry

Industry/Occupation	Jobs	Percentage
Finance and insurance	6,900	13.7
Manufacturing	6,750	13.4
Retail trade	6,200	12.3
Accommodation and food services	5,090	10.1
Construction	4,180	8.3
Administrative & support, waste management and remediation	4,080	8.1
Wholesale Trade	3,280	6.5
Health care and social assistance	2,720	5.4
Professional, scientific, and technical services	2,670	5.3
Management of companies and enterprises	2,320	4.6
Transportation and warehousing, and utilities	1,810	3.6
Educational services	1,710	3.4
Other services, except public administration	860	1.7
Real estate and rental and leasing	750	1.5

Table 5.14-4 City of Brea Employment by Industry

Industry/Occupation	Jobs	Percentage
Public administration	450	0.9
Information	400	0.8
Arts, entertainment, and recreation	200	0.4
Agriculture, forestry, fishing and hunting, mining, oil and gas extraction, and utilities	30	0.07
Total	**50,400**	**100%**

Source: Brea 2021; US Census Bureau 2017.
Note: Figures were rounded up to the nearest whole number of jobs and one decimal place in percentages. Employment figures count civilian employees 16 years and older.

Growth Projections

Southern California Association of Governments

SCAG undertakes comprehensive regional planning with an emphasis on transportation. The 2020-2045 RTP/SCS provides the most current projections of population, households, and total employment for Brea. Based on its share of California's and the region's employment growth, migration and immigration trends, and birth rates, SCAG projects that population, housing, and employment will grow at an increasing rate in Brea. These projections are summarized in Table 5.14-5, *SCAG Growth Projections for Brea.*

Table 5.14-5 SCAG Growth Projections for Brea

	2016	2045
Population	43,900	48,000
Employment	50,400	54,400
Households	15,300	17,000
Housing units[1]	16,065	17,850
Jobs-housing ratio	3.14	3.05

Source: SCAG 2020b.
[1] SCAG does not provide growth projections for housing units. Households refers to the number of occupied housing units (SCAG 2019). Housing units are estimated based on number of households and a healthy vacancy rate of 5 percent.

Jobs-Housing Ratio

The jobs-housing ratio is a general measure of the number of jobs versus housing in a defined geographic area, without regard to economic constraints or individual preferences. The jobs-housing ratio as well as the type of job versus the price of housing, has implications for mobility, air quality, and the distribution of tax revenues. A project's effect on the jobs-housing ratio is one indicator of how it will affect growth and quality of life in the project area. SCAG applies the jobs-housing ratio at the regional and subregional levels to analyze the fit between jobs, housing, and infrastructure. A main focus of SCAG's regional planning efforts has been to improve this balance; however, jobs-housing goals and ratios are only advisory. There is no ideal jobs-housing ratio adopted in state, regional, or city policies. The American Planning Association (APA) is an authoritative resource for community planning best practices, including recommendations for assessing jobs-housing ratios.

Although APA recognizes that an ideal jobs-housing ratio will vary across jurisdictions, its recommended target is 1.5, with a recommended range of 1.3 to 1.7 (Weltz 2003).

As shown in Tables 5.14-2 and 5.14-4, there are currently 50,400 jobs and 16,911 housing units in the city. Therefore, the current jobs-housing ratio for the city is 2.98, a jobs-rich community. As shown in Table 5.14-5, SCAG's growth forecast indicates that Brea was a jobs-rich community with a jobs-housing ratio of 3.14 in 2016 and would continue to be a jobs-rich community, with the ratio of 3.05 in 2045.

5.14.2 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:

P-1 Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

P-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

5.14.3 Plans, Programs, and Policies

No existing regulations are applicable to population and housing impacts of the proposed project.

5.14.4 Environmental Impacts

5.14.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-1: The proposed project would not induce unplanned substantial population growth in an area, directly by proposing residential units or indirectly by providing extension of roads or other infrastructure. [Threshold P-1]

Construction

Construction of the proposed project would require contractors and laborers. The proposed project would be developed in phases, and the City expects that general construction labor would be available from the local and regional labor pool and would not result in substantial population growth because the construction workers would commute from their current homes. The construction is assumed to last approximately seven to twelve years, with a buildout year of 2030 to 2035. Although project construction would take several years, different construction workers would be needed for different phases of construction, and general construction labor would be available from the local and regional labor pool. Therefore, the project would not result in a long-term increase in employment from short-term construction activities. Construction of additional housing for

construction workers would not be necessary, and no additional infrastructure construction would be provided. Therefore, the proposed project would not directly or indirectly induce substantial population growth in the project area during construction.

Operation

Assuming an average of 2.82 residents per unit, consistent with the household size reported in the City's 2021-2029 housing element, construction of 1,100 units would result in an increase of 3,102 residents. The current population in Brea is 45,629, as shown in Table 5.14-1, and the project would increase the city's population to 48,731 residents. The City's General Plan projected that the population in the city may increase to 50,483 at General Plan buildout. Therefore, an increase of 3,102 residents from the existing population would be within the City's planned growth. The housing element also considered that development of 1,100 units on the project site contributed to addressing Brea's housing needs, including 76 affordable units. The housing element identified the Brea 265 Specific Plan as one of the projects in process, with potential development of 25 very low income, 51 low income, and 1,024 above moderate income housing units.

The City's General Plan land use plan also estimated that over 2,500 units can be accommodated in the Brea's SOI. The proposed project would annex 219.1 acres of the SOI currently designated Hillside Residential and Low Density Residential into the city, consistent with the 2005 preannexation agreement between the City of Brea, County of Orange, and Aera Energy (project applicant). Therefore, development of 1,100 units and associated population increase would be consistent with the City's General Plan land use plan.

SCAG's RHNA allocation for the city during the 2021-2029 period is 2,365 units. Phase 1 and Phase 2 of the proposed project total 965 units and are anticipated to be completed within this cycle; Phase 3 is anticipated to be completed after 2030. Therefore, the proposed project would contribute to meeting Brea's RHNA allocation and fulfilling the City's share of regional housing needs. California's housing shortage brought about the Housing Crisis Act of 2019 (SB 330), which establishes a statewide housing emergency until January 1, 2025.

SCAG projected that the city's population would increase by 9.3 percent—from 43,900 residents in 2016 to 48,000 residents in 2045—and households would increase by 11 percent, from 15,300 households in 2016 to 17,000 households in 2045, as shown in Table 5.14-5. The proposed increase of 3,102 residents from Brea 265 would represent approximately 75.7 percent of the projected growth and is within SCAG's population growth projection.

The annexation of the hillside area currently in the SOI and the development of 1,100 units by the proposed project have already been considered in the City's General Plan land use plan and Housing Element, so the proposed project would not result in unplanned growth in the city. The growth would also be adequately accommodated by various infrastructure (e.g., circulation and streetscape improvements; water, sewer, and drainage facilities; and parks and recreational facilities) provided as part of Brea 265 and would not result in adverse physical impacts induced by unplanned substantial population growth.

Jobs-Housing Balance

A project's effect on the jobs-housing balance is an indicator of how it will affect growth and quality of life in the project area. Because the city is currently jobs-rich, with 2.98 jobs per housing in 2020[1] (see Tables 5.14-2 and 5.14-4), an additional 1,100 residential units would benefit the city by decreasing the jobs-housing ratio to 2.80,[2] resulting in a more balanced city (recommended range is 1.3 to 1.7). As shown in Table 5.14-5, SCAG's growth forecast indicates that Brea would continue to be jobs-rich community, with the ratio of 3.05 in 2045. Provision of additional housing would improve the jobs-housing ratio. Therefore, although the proposed project would induce population and housing growth in the city, the growth would improve the jobs-housing balance and contribute to fulfilling the city's share of RHNA allocation. Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.14-2: The proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. [Threshold P-2]

Implementation of the proposed project would not require removal or relocation of any housing units. The project area currently operates as oil fields, agricultural lands, and nursery, and no one lives on the project site. Therefore, the proposed project would not necessitate the construction of replacement housing elsewhere.

Level of Significance Before Mitigation: No impact.

5.14.5 Cumulative Impacts

The proposed project provides 1,100 homes in a jobs-rich city. When combined with the related cumulative projects in Brea, there would be an increase of 1,453 residential units and 814,917 square feet of nonresidential uses by 2045. By adding housing and nonresidential uses in the city, the combined projects would help balance the city's jobs-housing ratio from SCAG's 2016 baseline of 3.14 to 2.84, and year 2045 ratio of 3.05 to 2.79 (see Table 5.14-6, *Estimated Jobs-Housing Ratio With Cumulative Projects*). Therefore, the proposed project and the related cumulative projects would improve the city's jobs-housing balance, and impacts would not be considered significant.

Table 5.14-6 Estimated Jobs-Housing Ratio With Cumulative Projects

	SCAG Forecast					
	2016	2045	Proposed Project	Cumulative Projects	2016 Plus Project Plus Cumulative Projects	2045 Plus Project Plus Cumulative Projects
Employment	50,400	54,400	0	2,445	52,845	56,845
Housing units[1]	16,065	17,850	1,100	1,453	18,618	20,403
Jobs-housing	3.14	3.05	--	--	2.84	2.79

Source: SCAG 2020b.
[1] SCAG does not provide growth projections of housing units. Households refers to the number of occupied housing units (SCAG 2019). Housing units are estimated based on number of households and a healthy vacancy rate of 5 percent.
[2] Assumed 3 jobs per 1,000 square feet of non-residential areas, the same assumption used for the La Floresta Project (2006).

[1] Existing 50,400 jobs ÷ Existing 16,911 units = 2.98 jobs per housing unit
[2] Existing 50,400 jobs ÷ (Existing 16,911 units + Proposed 1,100 units) = 2.80 jobs per housing unit

5.14.6 Level of Significance Before Mitigation

These impacts would be less than significant: 5.14-1 and 5.14-2.

5.14.7 Mitigation Measures

No mitigation measures are required.

5.14.8 Level of Significance After Mitigation

No significant impacts related to population and housing were identified; therefore, no significant and unavoidable adverse impacts would occur.

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5. Environmental Analysis
POPULATION AND HOUSING

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5.15 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. Park services are addressed in Section 5.16, *Recreation*. Public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.19, *Utilities and Service Systems*.

5.15.1 Fire Protection and Emergency Services

5.15.1.1 ENVIRONMENTAL SETTING

Regulatory Background

International Fire Code

The International Fire Code (IFC) is a model code for regulating 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, with topics 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 various other topics. The IFC is issued by the International Code Council, which is an international organization of building officials.

State

California Fire Code

The California Fire Code (CFC; California Code of Regulations, Title 24, Part 9) is based on the 2018 IFC and includes amendments from the State of California fully integrated into the code. The CFC contains fire-safety-related building standards that are referenced in other parts of Title 24 of the California Code of Regulations. The CFC is updated once every three years; the 2019 CFC took effect on January 1, 2020.

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 Brea Municipal Code

Section 16.01.010, Fire Code Adopted, of Brea's fire code (municipal code chapter 16.04) states that the 2019 edition of the CFC in its entirety, together with the amendments, additions, deletions, and exceptions in Chapter 16.04, are the adopted fire code of the City.

City of Brea General Plan

The Brea General Plan policies support the City's fire and police services.

- **Policy PS-1.2.** Provide up-to-date technology to the Brea Police and Fire Department.
- **Policy PS-1.4.** Work with the Fire Department to determine and meet community needs for fire protection and related emergency services. Ensure that sufficient stations, personnel, and equipment are provided to meet growth needs in the City.
- **Policy PS-1.5.** Maintain a maximum 4- to 6-minute emergency response time for fire safety services. Maintain a 3- to 5-minute response time from emergency police response services. Require that all new development be able to meet established standards for such response.
- **Policy PS-1.6.** Impose special conditions as needed on development projects to ensure that adequate fire protection measures are in place and maintained.

Existing Conditions

Fire Stations, Equipment, Staffing, and Mutual Aid

The Brea Fire Department serves the city of Brea and is the primary fire department providing service to the project site. The Los Angeles County Fire Department, Fullerton Fire Department, Orange County Fire Authority, and Placentia Fire and Life Safety Department provide mutual aid. Table 5.15-1, *Fire Stations and Equipment Serving the Project Area*, lists fire stations that respond to service requests in the project vicinity.

Table 5.15-1 Fire Stations and Equipment Serving the Project Area

Station	Address	Equipment
City of Brea Fire Department		
Brea Fire Department – Station #1	555 North Berry Street, Brea	Type 1 – Advanced Life Support, 4 personnel
Brea Fire Department – Station #2	200 North Brea Boulevard, Brea	Pierce/tiller – Advanced Life Support (ALS), 4 personnel, Cross Staffed Type 3
Brea Fire Department – Station #3	2600 E. Santa Fe Rd, Brea, CA 92821	Four person ALS engine company - ATV
Brea Fire Department – Station #4	198 N Olinda Place, Brea, CA 92823	Type 3 2 person BLS

Source: Nigg and Salgado 2020.

Metro Cities Fire Authority

Metro Cities Fire Authority, also known as Metro Net Fire Dispatch (Metro Net), is an emergency communications center in Orange County. Metro Net Fire Dispatch provides 911 fire and EMS dispatch services to more than 1.3 million people in an area of approximately 210 square miles. Under a joint-powers authority agreement, Metro Net Fire Dispatch serves the cities of Anaheim, Brea, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Newport Beach, and Orange.

In 2018, 122,616 calls were dispatched, and approximately 83 percent of the calls dispatched were medical in nature.

Response Times

Performance objectives for the Brea Fire Department are based on the National Fire Protection Association's Standard 1710.

- **Firefighter Turnout Time**
  - Medical Calls. To put on the appropriate gear and get on the fire apparatus for a medical call, crews have 60 seconds from time of dispatch.
  - Fire/Traffic Accidents: To put on the appropriate gear and get on the fire apparatus for a fire or traffic accident, crews have 80 seconds from time of dispatch.
- **First Fire Apparatus to Arrive on Scene**
  - From the time the first fire apparatus leaves the station until it arrives at the given location, crews have 240 seconds or 4 minutes.
- **Initial Full Alarm to Arrive on Scene**
  - For a multiunit response such as a house fire, 1 battalion chief, 3 fire engines, and 1 ladder truck will be dispatched. The time for these emergency resources to arrive on scene is 480 seconds or 8 minutes.

The average monthly turnout/arrival time from January 2019 to April 2019 ranged from 4 minutes 47 seconds to 5 minutes 04 seconds. This an improvement over the same time a year ago, that is, January 2018 to April 2018, when it ranged from 4 minutes 58 seconds to 5 minutes 24 seconds. These times do not include the project site because the project site is currently not generating any emergency response calls.

Development Impact Fees

Dispatch Impact Fees

The City of Brea established these fees as necessary for upgrading police- and fire-dispatch systems, thus ensuring that new development is provided with appropriate public safety services (Brea 2018a).

- Multifamily: $40/dwelling unit
- Single family: $55/dwelling unit
- Commercial: $55/1,000 square foot
- Office: $77/1,000 square foot
- Industrial: $40/1,000 square foot.

Fire Impact Fees

The purpose of the fire impact fee is to ensure that new development finances its fair share of fire protection facilities (Brea 2018a).

- Multifamily: $731/dwelling unit

- Single family: $1,029/dwelling unit
- Commercial: $191/1,000 square foot
- Office: $267/1,000 square foot
- Industrial $138/1,000 square foot

Fire Service Fees

Fire service connection charges are applicable to all new construction where fire service is to be installed (Brea 2018a). Fire service connection fees are buy-ins used to recover the cost of existing reservoir storage and water system capacity for private fire systems. The connection fees for fire service are:

- 4-inch connection: $3,562
- 6-inch connection: $ 4,987
- 8-inch connection: $6,484
- 10-inch connection: $9,337
- 12-inch connection: $9,337

Wildfire Hazard Zones

The incorporated part of the project site is in the City of Brea's local responsibility area (LRA) as a very high fire hazard severity zone (FHSZ); the area in the city's sphere of influence is in the Orange County Fire Authority's unincorporated LRA as a very high FHSZ (CAL FIRE 2011; Brea 2001). (See also Section 5.20, *Wildfire*.)

5.15.1.2 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:

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.

5.15.1.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

PPP PS-1 New buildings are required to meet the fire regulations outlined in California Health and Safety Code (Sections 13000 et seq.).

PPP PS-2 The project applicant is required to pay applicable development impact fees (e.g., dispatch impact fees, fire impact fees, fire service fees) or in-lieu fees as stipulated by the approved Development Agreement.

PPP PS-3 All development associated with the Brea 265 Specific Plan will be designed, built, and operated in accordance with the City of Brea's Municipal Code Chapter 15.08, Building Code, and Chapter 16.04, Brea Fire Code.

Conditions of Approval

PPP PS-4 As part of the project review process, the City of Brea Fire Department will require approval of Building Plan Check for Site Plan and Emergency Access. Additional design features to address the City of Brea Fire Department's requirements will be incorporated as conditions of approval for the Brea 265 Specific Plan.

PPP PS-5 The project applicant is required submit an overall Fire Master Plan at the time of the Brea 265 Specific Plan approval to be reviewed and approved by the City of Brea Fire Department as conditions of approval. The conditions of approval will also require that the project applicant submit separate fire plans at the time of tentative tract map review process for individual planning area to be reviewed and approved by the Brea Fire Department.

PPP PS-6 The project applicant is required to pay fees pursuant to the approved Development Agreement to provide two "Activated Snorkel Station–Heli-Hydrant" facilities as dipping sites for aerial firefighting aircraft tasked with responding to wildfires. The Activated Snorkel Station–Heli-Hydrant facilities will be on a site owned by the project applicant and agreed to by the City of Brea.

PPP PS-7 The project applicant is required to reserve a one-acre graded pad site at the northwestern corner of Lambert Road and Valencia Avenue for the construction of a public safety/civic uses purposes by the City of Brea.

Project Design Features

PPP PS-8 The Brea 265 Specific Plan will provide a minimum of 170 feet on-site of interface distance according to the City of Brea's Very High Fire Hazard Severity Zone–Fuel Modification requirements, as reviewed and approved by the Fire Code Official. Maintenance of the fuel modification area will be the responsibility of the homeowners association. Figure 5.20-2, *Fuel Modification Areas*, shows the proposed fuel modification areas.

PPP PS-9 All development associated with the Brea 265 Specific Plan will be designed, built, and operated in accordance with the Brea Fire Department's Very High Fire Hazard Severity Zone–Fuel Modification requirements.

PPP T-4 A site-specific construction worksite staging and traffic control plan will be prepared and submitted to the City of Brea for review and approval prior to the start of any construction work. This plan will include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons, lights,

warning beacons, temporary traffic signals, warning signs). The proposed project will be required to comply with the City-approved plan measures.

5.15.1.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement

Impact 5.15-1: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered fire protection 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. [Threshold FP-1]

Additional population and residential development from the proposed project would increase the demand for fire protection facilities and personnel within the Brea Fire service boundaries. Mutual aid for the project area is provided by the Los Angeles County Fire Department, Fullerton Fire Department, Orange County Fire Authority, and Placentia Fire and Life Safety Department. The unincorporated area of the project site would be annexed into the city and served by the Brea Fire Department after the proposed project is approved.

The proposed project would likely increase the calls to Metro Net, potentially resulting in delays to arrival on scene. However, the proposed project is required to participate in the development impact fee program or pay in-lieu fees (PPP PS-2) and go through the project review process to ensure that the development is constructed in accordance with the applicable Fire Code and Health and Safety Code (PPP PS-1 and PPP PS-3), and that adequate fire services and infrastructure are available to accommodate the proposed development. An overall Fire Master Plan for the proposed project would be submitted for review and approval by the Brea Fire Department with the final Brea 265 Specific Plan approval. And during the development review and permitting process, Brea Fire Department would review and approve a fire master plan(s) for each planning area to ensure that emergency access, water and accessibility to each residential building and lot is provided to serve the needs of the fire department (PPP PS-5). The required building plan check for site plan and emergency access would ensure that the proposed project incorporates appropriate fire safety features to reduce project impacts (PPP PS-4). All development associated with the Brea 265 Specific Plan would be designed, built, and operated in accordance with the City's Very High Fire Hazard Severity Zone–Fuel Modification requirements (PPP PS-8 and PPP PS-9).

The nearest fire station to the project area is Fire Station #3 at 2600 E. Santa Fe Road, approximately 0.4 mile to the west; Fire Station #4 at 198 N Olinda Place, approximately 2 miles east of the project site, is also anticipated to serve the project site. The existing average response time for Brea Fire ranges from 4 minutes 47 seconds to 5 minutes 4 seconds, and the City's goal is to respond within 4 minutes for the first fire apparatus to arrive on scene, and 8 minutes for a multiunit response team to arrive on scene. Implementation of the proposed project would result in increased services demands at Fire Station #3 and Station #4.

According to the Brea Fire Department, Fire Station #4 routinely experiences increased response times because of traffic during commuting hours. Carbon Canyon Road is a two-lane roadway (one in each direction) that

experiences restricted ingress and egress through the canyon; the increased number of vehicles on the road due to the proposed project could result in delayed response times. The Brea Fire Department indicated that the traffic delays, coupled with understaffing at Fire Station #4, could affect the department's ability to provide adequate fire services to the proposed project. The first personnel to arrive at the scene have to wait for the second unit to arrive before interior firefighting can begin, and the second unit could be delayed by additional traffic or lack of appropriate staffing to meet the new demands from the proposed project. The following relevant factors have been identified as Brea Fire Department's potential inability to provide adequate service to the project site:

- Increase in traffic.
- Increased ingress and egress in and around the surrounding roads that would increase response times.
- Increase in call volume.
- Construction of 1,100 residential units requires additional staffing to adequately provide effective firefighting force.
- An increased exposure to wildland fires because the project area is designated Very High Fire Hazard Severity Zone.

However, the project applicant will be required to implement PPP PS-1 through PPP PS-9, thereby reducing project impacts to Brea Fire Department. In addition to contributing to additional funds toward essential fire and public safety priorities, which would be paid in lieu of fire impact and fire service fees, and compliance with buildings standards, the project applicant would contribute to provision of additional fire and public safety facilities to benefit the hillside area. The project applicant will provide funding for two "Activated Snorkel Station Heli-Hydrant" facilities as dipping sites for aerial firefighting aircraft tasked with responding to wildfires in the hills immediately to the north of the project site. These facilities would be on a property owned by the project applicant and agreed to by the City (PPP PS-6). It is anticipated that permitting, construction, and maintenance of the facilities would be the responsibility of the City, and environmental impacts from construction and operation of the facilities is not under the purview of this DEIR analysis. The project applicant is also reserving a one-acre, graded pad site at the northwestern corner of Lambert Road and Valencia Avenue for future development of public safety/civic uses by the City (PPP PS-7).

Provided that the project is required to implement PPP PS-1 through PPP PS-9, and PPP T-4, the proposed project would not result in a substantial adverse physical impact related to fire protection services, and impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP PS-1 through PPP PS-9.

5.15.1.5 CUMULATIVE IMPACTS

The proposed project, along with other cumulative projects in Brea, would result in increased fire protection demands within the Brea Fire Department's service boundaries. The proposed project would be constructed in phases so that necessary infrastructure and public facilities are constructed to adequately serve the development. The proposed project and other development projects in the city would be required to implement PPP PS-1 through PPP PS-5, which include compliance with the California Health and Safety Code, the City of Brea's Municipal Code and Brea Fire Code; payment of development impact fee fees; and review and approval of building plans, emergency access plans, and fire master plan by the fire department to reduce impacts. Additionally, the proposed applicant is required to implement PPP P PS-6 and PPP PS-7, which would benefit other hillside development in the area by providing locations for fire service and public safety/civic use facilities that would be beneficial to other city residents. And although the project site is in a very high FHSZ, the proposed project is required to be developed in accordance with the Brea Fire Department's Very High Fire Hazard Severity Zone-Fuel Modification requirements (PPP PS-8 and PPP PS-9). It is anticipated that other cumulative projects in Brea would also be required to provide or pay fees to provide adequate on- and off-site fire protection infrastructure. Therefore, with implementation of PPP PS-1 through PPP PS-9, the Brea Fire Department would be able to maintain adequate fire protection levels and response times in the city, and this cumulative impact would be considered less than significant.

Level of Significance Before Mitigation: Less than significant impact.

5.15.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of the plans, programs, and policies, the following impact would be less than significant: 5.15-1.

5.15.1.7 MITIGATION MEASURES

No mitigation measures are required.

5.15.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant impacts related to fire services were identified without mitigation; no significant and unavoidable adverse impacts would occur.

5.15.2 Police Protection

5.15.2.1 ENVIRONMENTAL SETTING

Regulatory Background

Local Regulations

City of Brea General Plan

The Brea General Plan policies support the City's fire and police services.

- **Policy PS-1.1.** Work with the Police Department to determine and meet community needs for law enforcement.
- **Policy PS-1.2.** Provide up-to-date technology to the Brea Police and Fire Department.
- **Policy PS-1.3.** Continue to maintain and develop a community-based police strategy compatible with the needs and size of the community.
- **Policy PS-1.5.** Maintain a maximum 4- to 6-minute emergency response time for fire safety services. Maintain a 3- to 5-minute response time from emergency police response services. Require that all new development be able to meet established standards for such response.
- **Policy PS-1.7.** Incorporate the tenets of Community Oriented Policing into the design of crime prevention and enforcement programs.
- **Policy PS-1.8.** Use technology to improve crime prevention efforts.

Existing Conditions

Law enforcement and police protection services are provided by the Brea Police Department (BPD) headquartered at 1 Civic Circle in Brea. BPD is divided into the uniform division and support services division, directed by two captains (Brea 2021b, 2021). These two divisions are comprised of a K-9 unit, communications center, crime suppression unit, several investigation units, patrol unit, professional standards unit, S.W.A.T. unit, threat management unit, and traffic unit (Brea 2021b). The existing staffing levels are 61 full-time sworn officers, 29 full-time nonsworn employees, and 19 part-time nonsworn employees. There are over 40 patrol officers in the uniform division, and their duties include:

- Response to emergency, in-progress crimes.
- Conduct on-scene investigations, including fingerprinting, photography, interviewing, and interrogation.
- Write crime reports documenting incidents.
- Arrest and book criminal offenders.
- Stop traffic violators and warn or cite the driver.
- Patrol their assigned area, checking residential and business areas for illegal activity. (Brea 2018c)

The BPD Communications Center includes a communications supervisor, four senior dispatchers, six full-time dispatchers, and nine part-time dispatchers; it operates 365 days a year, 24 hours a day (Brea 2021e). Calls for service are prioritized into several categories, with emergency calls being the most important; the department's average response time has been under 3.5 minutes (Brea2021e).

Response Times

BPD's desired emergency response time is 3 minutes and 30 seconds, and nonemergency response times average 6 minutes or greater depending on the call nature and call volume. The General Plan Policy PS-1.5 identifies the goal is to maintain a maximum 3- to 5-minute emergency response time for police services.

Dispatch Impact Fees

The City of Brea established these fees as necessary for providing upgrades to the police and fire dispatch systems, ensuring that new development is provided with appropriate public safety services (Brea 2018a).

- Multifamily: $40/dwelling unit
- Single family: $55/dwelling unit
- Commercial: $55/1,000 square feet
- Office: $ 77/1,000 square feet
- Industrial: $40/1,000 square feet

5.15.2.2 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:

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.

5.15.2.3 PLANS, PROGRAMS, AND POLICIES

Project Design Features

PPP PS-10 As part of the project review process, the City of Brea Police Department will recommend the following project design features to improve security on-site, and the Project Applicant will incorporate these design features as appropriate.

- Provide individual mailboxes rather than gang mailboxes to reduce mail theft vulnerability.
- All common areas should be properly lit to increase surveillance and discourage unwanted activities.
- All trail/park areas should include connectivity for potential future surveillance camera locations.
- Provide the maximum amount of off-street parking.

PPP PS-11 The project applicant will consult with Brea Police Department on street addressing and signage, particularly in high density areas.

Regulatory Requirement

PPP PS-12 The project applicant is required to pay dispatch impact fees and all other development impact and/or special assessment fees as deemed applicable by the City of Brea.

5.15.2.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-2: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, however, the proposed project could adversely affect service ratios, response times, or other performance objectives for police protection services. [Threshold PP-1]

The Brea Police Department at Brea Civic and Cultural Center provides police protection service to Brea, including the project site. According to BPD, it is anticipated that the proposed project would increase calls for service, total numbers of crimes, officer-initiated activity (traffic enforcement, preventative patrol, etc.), 9-1-1 calls into the Communications Center, and need for community outreach. The ratio of police officers is 1.4 officers per 1,000 population, and the addition of 1,100 units is estimated to generate 400 to 450 police incidents per year. Projected types of incidents include burglary, theft, alarm activations, disturbances, suspicious persons and vehicles, traffic and parking complaints, and traffic enforcement. Police officers patrol within the city's service boundaries, and all calls for service are dispatched from the BPD Communications Center.

In February 2020, the City retained a consultant to prepare a staffing needs analysis for the BPD, and it recommended that three police officers be added to patrol positions by June 2022 and two more officers to patrol by June 2024. This staffing analysis report included data from the proposed project as "projected residential growth factor" to analyze future staffing needs and make adjustments. Funding for police resources comes primarily from the property tax revenue, and with phased development of the proposed project, the property tax collection would grow incrementally to offset the expected increase in police service staffing needs. Though no physical expansion or construction of police facilities would be required to house five additional patrol officers, BPD has identified a need for additional funding to train staff and procure associated equipment. Therefore, in addition to the dispatch impact fees and other development impact fees, the project applicant would pay special assessment fees to provide adequate training and equipment for BPD (PPP PS-12). Additionally, the project applicant has reserved a one-acre site at the northwestern corner of Lambert Road and Valencia Avenue for the construction of a police substation and fire station (PPP PS-6).

The proposed project is of quality design, as discussed in Section 5.1 *Aesthetics*, of this Draft EIR, and would not include features that could lead to high crime rates. As shown on Figure 3-14, *Circulation Plan*, the proposed project would provide gated access to the east side of the project site and no gated entries would be provided

on the west side of the project site. While gates access could hinder emergency response and deter preventive patrols, a gated community could also minimize opportunistic burglaries, increase privacy, and act as crime deterrent. Although the proposed project would implement PPP PS-10 and PPP PS-11 to encourage natural surveillance and discourage crimes, additional site planning and crime prevention features would be necessary to further ensure that BPD can respond quickly and effectively to calls for assistance. It is also anticipated that the proposed project would have an HOA to provide quality maintenance to create an environment that does not invite vandalism and other crimes.

The proposed project would result in increased traffic in the area roadways, potentially affecting the response times for police services. However, traffic impacts within the jurisdiction of the City of Brea would be reduced to a less than significant level with implementation of various roadway improvements, as discussed in Appendix N, *Traffic Study,* and potential increase in response times would not result in physical environmental impacts to police services.

Level of Significance Before Mitigation: Potentially significant impact.

5.15.2.5 CUMULATIVE IMPACTS

Implementation of the proposed project in conjunction with other development in the City would increase the overall police services demands for BPD. However, buildout of the proposed project along with other City development would occur over an extended period of time, and there is no current plan to expand or construct police facilities. Increased demand for additional staffing and equipment would be accommodated with applicable fee and tax payment during budget allocation process. The fees and tax revenues generated by cumulative projects in the city are anticipated to maintain safe police protection services. No long-lasting adverse physical impacts are anticipated from providing adequate police service to the project site and its vicinity. No significant cumulative impacts are expected to occur related to police protection facilities.

Level of Significance Before Mitigation: Less than significant impact.

5.15.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.15-2** Implementation of the proposed project could result in adverse police protection service impact without adequate site design features.

5.15.2.7 MITIGATION MEASURES

PS-1 Prior to issuance approval of each tentative tract map, the project applicant shall demonstrate compliance with the site planning guidelines referred to as Crime Prevention Through Environmental Design (CPTED). CPTED is based on the principle that proper design and effective use of buildings and public spaces in neighborhoods can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life. These guidelines are intended to optimize the ability of the police department to respond quickly and effectively to calls for assistance and also to incorporate crime prevention measures into the design of

future homes, open space areas, and public trails. Examples of such measures include minimizing vegetation or structural screening that could obstruct visibility into public parks by passing patrol units; installation of special locks and/or electronic security devices; incorporation of practical access control (doors, fences); promote surveillance through minimum security lighting, windows, and landscaping; and provide territorial reinforcement through proper signage and sidewalks.

5.15.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of mitigation measure, impacts related to police service would be reduced to a less than significant level, and no significant and unavoidable adverse impacts would occur.

5.15.3 School Services

5.15.3.1 ENVIRONMENTAL SETTING

Regulatory Background

State

California State Assembly Bill 2926: School Facilities Act of 1986

To assist in providing school facilities to serve students generated by new development, Assembly Bill (AB) 2926 was enacted in 1986 and authorizes a levy of impact fees on new residential and commercial/industrial development. The bill was expanded and revised in 1987 through the passage of AB 1600, which added Sections 66000 et seq. to the Government Code. Under this statute, payment of impact fees by developers serves as CEQA mitigation to satisfy the impact of development on school facilities.

California Senate Bill 50

Senate Bill (SB) 50, passed in 1998, provides a comprehensive school facilities financing and reform program and enables a statewide bond issue to be placed on the ballot. Under the provisions of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases. The funding goes to acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining the amount of fees developers would be charged to mitigate the impact of development on school districts from increased enrollment. 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."

Under this legislation, there are three levels of developer fees that may be imposed upon new development by the governing school district. Level I fees are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide one-half of the costs of accommodating students in new schools, and the state provides the remaining half. To qualify for Level II fees, the governing board of the school district must adopt a School Facilities Needs Analysis and meet other prerequisites in accordance with Section 65995.6 of the California Government Code. Level III

fees apply if the state runs out of bond funds, allowing the governing school district to impose on the developer 100 percent of the cost of school facility or mitigation minus any local dedicated school monies.

Existing Conditions

Enrollment and Capacity

The Brea Olinda Unified School District (BOUSD) consists of six elementary schools, one junior high school, one high school, and one continuation high school and serves approximately 6,000 students (BOUSD 2018). Table 5.15-2, *School Enrollment and Capacity,* provides the enrollment and capacity per school that would serve the project site.

Table 5.15-2 School Enrollment and Capacity

School and Location	Enrollment (7-year average)	Total Capacity	Remaining Capacity
Olinda Elementary School	623	850	227
Brea Junior High School	909	1,248	339
Brea Olinda High School	1,806	2,720	914

Source: PlaceWorks 2021; CDE 2021.

Development Impact Fees

The school district has adopted a fee program pursuant to SB 50 that levies statutory school impact fees per residential building square footage.

- Residential: $4.08/square foot (Cooperative Strategies 2018)

5.15.3.2 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:

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.

5.15.3.3 PLANS, PROGRAMS, AND POLICIES

PPP PS-13 Pursuant to AB 2926, new development is required to pay development impact fees to assist in providing school facilities to serve students generated by new development.

PPP PS-14 Pursuant to SB 50, new development is required to offset the costs associated with increasing school capacity, where the funds collected go to acquiring school sites, constructing new school facilities, and modernizing existing school facilities.

5.15.3.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-3: The proposed project would not result in a substantial adverse physical impact associated with the provisions of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services. [Threshold SS-1]

The project site is within the attendance boundaries of Olinda Elementary School, Brea Junior High School, and Brea Olinda High School. According to the California Department of Education, the enrollment at Olinda Elementary School has increased in the past seven years from 563 kindergarten through 6th graders in 2014-15 to 601 students in 2020-21 (CDE 2021). For Brea Junior High School, student enrollment also increased slightly in the past seven years—from 891 students in 2014-15 to 929 students in 2020-21 in grades 7 and 8. Brea Olinda High School's enrollment of 9th through 12th grade students declined—from 1,895 in 2014-15 to 1,758 students in 2020-21.

Table 5.15-3, *Student Generation Summary*, shows the anticipated number of students generated by the proposed project. There are no students under the existing condition, and implementation of the proposed project would generate approximately 196.3 elementary students, 57.3 middle school students, and 105.2 high school students, a total of 359 additional students. As shown in Table 5.15-2, the existing school facilities are anticipated to have adequate capacity for the additional students generated by the proposed project without having to build new or expanded school facilities.

Table 5.15-3 Student Generation Summary

School Level	Student Generation Factors		Units	Total Students	
Elementary (Grades K–6)	SF Detached Units	0.2351	450	405.795	196.3
	MF Attached Units	0.1392	650	90.48	
Middle (Grades 7–8)	SF Detached Units	0.0673	450	30.285	57.3
	MF Attached Units	0.0415	650	26.975	
High (Grades 9–12)	SF Detached Units	0.1300	450	58.5	105.2
	MF Attached Units	0.0718	650	46.67	
		Total	**1,100**	**-**	**358.7**

Source: Cooperative Strategies 2020.

Furthermore, the increased demand for school facilities would be accommodated through the payment of development fees. The funding program established by SB 50 has been found by the legislature to constitute "full and complete mitigation of the impacts" on the provision of adequate school facilities (Government Code Section 65995(h)). SB 50 sets forth a state school facilities construction program that includes restrictions on a local jurisdiction's ability to demand mitigation of a project's impacts on school facilities in excess of fees in Education Code section 17620. Payment of impact fees as adopted by BOUSD and in compliance with SB 50 would reduce impacts to an acceptable level.

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP PS-13 and PS-14.

5.15.3.5 CUMULATIVE IMPACTS

The 1,100 additional housing units allowed by the proposed project would increase the demand on school facilities at Olinda Elementary School, Brea Junior High School, and Brea Olinda High School, and other development projects in the BOUSD boundary would cumulatively impact BOUSD's ability to provide adequate educational services. However, compliance with the fee program established by SB 50 would ensure that adequate mitigation is provided. The program under SB 50 has been found by the legislature to constitute "full and complete mitigation of the impacts of any legislative or adjudicative act on the provision of adequate school facilities." The fees authorized for collection by BOUSD are therefore deemed full and adequate mitigation of impacts on those districts. Therefore, no significant cumulative impacts are expected to occur to school services.

5.15.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of the plans, programs, and policies, the following impact would be less than significant: 5.15-3.

5.15.3.7 MITIGATION MEASURES

No mitigation measures are required.

5.15.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No potentially significant impacts related to school service have been identified without mitigation; therefore, no significant and unavoidable impacts would occur.

5.15.4 Library

5.15.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Local Regulations

City of Brea General Plan

The General Plan contains the following goal and policies for providing library resources to the city.

Goal CS-4: Provide library resources that meet the educational, cultural, civic, business, and life-long learning needs of all residents. Retain a local library system that is community-oriented, provides knowledgeable, service-oriented staff, and offers access to information, books, and other materials in a variety of formats that use contemporary technology:

- **Policy CS-4.1.** Encourage the County to develop programs and services for adults, children, and new readers that meet future needs.
- **Policy CS-4.2.** Work with library staff to assess, select, organize, and maintain collections of materials and information sources of value to and desired by the community.
- **Policy CS-4.3.** Work with library staff to maintain technological services that meet the needs of residents, as well as reader advisory, reference and referral services, responsive to user needs.
- **Policy CS-4.4.** Explore funding opportunities for the City to expand the existing County branch library and/or operate a local, independent library.

Existing Conditions

Brea Branch Library

The Brea Branch Library is part of the Orange County Public Library (OCPL) community library network, which includes 33 branches throughout Orange County. OCPL is a dependent special district governed by the Orange County Board of Supervisors. It is the third largest local library system in California.

The Brea Branch Library is at 1 Civic Center Circle in Brea. It offers an assortment of materials and programs—including books, newspapers, magazines, videos and DVDs, music CDs, audiobooks, and digital services such as ebooks, audiobooks, and subscription databases (Brea 2019). Programming includes activities for all ages such as story times, craft programs, book clubs, individualized computer instruction, a writers group, and the annual Summer Reading Program. The library benefits with support and advocacy from the Friends of the Brea Library, an independent, nonprofit organization.

5.15.4.2 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:

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.

5.15.4.3 PLANS, PROGRAMS, AND POLICIES

There are no existing plans, programs, and policies applicable to the proposed project.

5.15.4.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-4: The proposed project would result in a substantial adverse physical impact associated with the provisions of new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for library services. [Threshold LS-1]

The proposed project is anticipated to increase the city's population by 3,102 residents and therefore would also increase the number of potential library users. Residents of Orange County can use any library in the OCPL system if they are a member; this analysis focuses on OCPL libraries in the City of Brea. Orange County's service standard is 0.2 square foot of facilities and 1.5 book volumes per capita for residential communities. Therefore, the increase in population would require additional library space of 620.4 square feet and 4,653 book volumes. It should be noted that the OCPL also provides a wide range of online electronic and digitized resources that do not require physical library space. Funding would be required to provide the additional books to meet the service standard. Revenue for OCPL comes primarily from the property tax revenue, supplemented by other sources such as impact fees program. In November 2021, the Orange County Board of Supervisors approved to indefinitely eliminate library late fines to further provide free and equal access to services. Generally, impact fees are assessed on new development to help pay for public infrastructure required to accommodate the new development. The City of Brea does not have an established fee schedule for library impact. Although property tax revenue is anticipated to grow proportionally with the property tax collection as development occurs, adding 1,100 units within the OCPL service boundaries would require additional library resources. Therefore, this impact is considered potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

5.15.4.5 CUMULATIVE IMPACTS

Implementation of the proposed project in conjunction with the cumulative projects in the City of Brea would result in added library services demand in the current library system. However, as with the proposed project, other development projects would also contribute to the property tax revenues that would fund the County's library system and would be required to pay library impact fees to offset its fair-share of the cost of providing additional library resources within the OCPL system. No significant cumulative impacts are anticipated to occur related to library services.

5.15.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.15-4** Implementation of the proposed project would result in increased demands for library services.

5.15.4.7 MITIGATION MEASURES

PS-2 Prior to each building permit, the Project Applicant shall pay library impact fees to the County of Orange to offset its fair share of the costs of providing additional library resources and shall provide proof of payment to the City of Brea. A fair-share cost per unit shall be established in coordination with the County of Orange.

5.15.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure PS-2 would reduce potential impacts associated with library services to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to library services would remain.

5.15.5 References

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5.16 RECREATION

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the proposed project to impact public parks and recreational facilities.

5.16.1 Environmental Setting

5.16.1.1 REGULATORY BACKGROUND

City of Brea Municipal Code

According to Section 2.24.020 of Chapter 2.24, Parks, Recreation, and Human Services Commission, the commission shall:

- Coordinate all of the recreation, leisure time, and cultural activities of the city.
- Provide for the establishment and maintenance of sound recreation and parks programs.
- Ensure the efficient operation of all recreation and parks facilities within the city.
- Encourage a sound and well-rounded program of activities to service the recreational, park, cultural, leisure time and other needs of people within the city.

City of Brea General Plan

The goals and policies of the Brea General Plan include providing a variety of parks and recreation facilities that meet the diverse needs of the community, protecting and preserving existing parks and recreation facilities, and maximizing use of open space areas capable of supporting park-type activities.

Park Development Fees

There is an approval process for paying park development fees versus land dedication. Park development fees are charged for new development to fund park development and improvements; charges are determined based on the number and type of residential units being constructed (Brea 2019a).

5.16.1.2 EXISTING CONDITIONS

Brea has 19 park and recreation facilities, including mini or pocket parks, a dog park, neighborhood parks, school parks, community parks, regional parks, Carbon Canyon Regional Park, Ted Craig Regional Park, hiking trails, and Birch Hills Golf Course (Brea 2019b). In addition, Chino Hills State Park encompasses 11,770 acres in the counties of Orange, Riverside, and San Bernardino and occupies approximately 16 percent of Brea's total planning area.

An approximately 3,400-acre area of Chino Hills State Park, including natural wilderness area with hiking, biking, and equestrian trails, is in Brea and its sphere of influence. Passive open space and park areas account for 5 percent of the land within the city limits. The project area is an active oil field and does not contain any parks or recreational facilities.

5.16.2 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:

R-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.16.3 Plans, Programs, and Policies

PPP REC-1 The proposed project is required to comply with Brea Municipal Code Section 18.64.080 that establishes the subdivision regulations for the provision of park and recreational facilities through land dedication, installation of improvements, payment of in-lieu fee thereof, or a combination. Where applicable, new development is required to fund park development and improvements through the payment of park development fees.

5.16.4 Environmental Impacts

5.16.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.16-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. [Threshold R-1]

The proposed project would add approximately 3,102 residents to the city, creating demands for various recreational facilities such as neighborhood and regional parks. However, the proposed project includes construction of a 13-acre sports park and 2.1-acre staging area park, a network of bicycle and pedestrian trails, and 47.5 acres of open space and trails, for a total of 62.6 acres of park/recreation and open space area. The proposed project would provide adequate parklands within the project site to minimize additional demands to the existing recreational facilities within the city.

Brea has a goal of 5 acres per 1,000 population for public park and recreational facilities (Brea 2003a). According to the General Plan, the City designates 980 acres as parks and open space (Brea 2003a). Considering the city's total population of 45,629 (DOF 2020), the City is providing 21.48 acres of parkland and recreational facilities per 1,000 population,[1] exceeding its goal.

[1] 980 acres of parkland ÷ 45,629/1,000 population = 21.48 acre per 1,000 population

The Brea Municipal Code Section 18.64.080 establishes the subdivision regulations for the provision of park and recreational facilities through land dedication, installation of improvements, payment of in-lieu fees, or a combination. Municipal Code Section 18.64.080 requires the land dedication ratio of 5 acres per 1,000 population and sets the population density at 3.5 persons per single-family dwelling unit and 2.0 persons per multifamily dwelling unit.[2] The proposed project would provide 450 Low Density Residential (LDR) units at a density range of 1.0 to 6.0 dwelling units per acre (du/ac) and 650 Medium Density Residential (MDR) units at a density range of 6.1 to 12 du/ac, including 76 affordable housing units. Based upon the proposed 1,024 single-family residential units and 76 multifamily residential units, a minimum of 18.68 acres[3] of parks and recreational facilities are required to be provided in Brea 265 to satisfy the dedication requirement of 5 acres per 1,000 population.

The proposed project would provide 15.1 acres of park and recreation areas and 47.5 acres of open space and trails. Therefore, the proposed project would exceed the minimum requirement of 18.68 acres of parks and recreation facilities (PPP REC-1). The 13-acre Sports Park amenities are illustrated on Figure 3-11, *Sports Park*, which include a lighted baseball field, soccer field, tennis courts, a full basketball court, warmup field, and restrooms with drinking fountain. The 2.1-acre Staging Area Park is illustrated on Figure 3-10, *Staging Area Park*, and it accommodates a dual-tread multipurpose trail, shade structure with picnic tables, restroom with drinking fountain, parking, and bike racks. The proposed parks and trails in the open space areas would be publicly accessible and privately maintained by HOAs. Other recreational facilities such as clubhouses and swimming pools would be privately accessible and maintained. The publicly accessible parks and trails in the open space areas will receive 100 percent credit toward fulfilling the parkland dedication requirement, and the privately accessible recreational facilities will receive 50 percent credit.

As shown on Figure 3-5, *Parks, Recreation, and Open Space Plan*; Figure 3-6, *Nonvehicular Circulation Plan*; and Figure 4-4, *The Tracks at Brea Trail*, the proposed trails would connect to the existing trails near Carbon Canyon Regional Park, Chino Hills State Park, Brea Sports Park, and the Tracks via the Brea Trail Route, thereby providing a better connectivity for the rest of Brea from and to these recreational facilities.

In addition to the park and recreation areas, approximately 47.5 acres of open space and trails would be provided in Brea 265. Therefore, the proposed project would provide more recreational space than the standard established under the City's General Plan and would result in beneficial impact to the city and surrounding community residents.

Overall, the proposed project would add an additional 62.6 acres of public parks, open space, and trails to the city, providing parklands and open space that exceeds the established parkland standard of 5 acres per 1,000 population. The city already provides 21.48 acres of parkland and recreational facilities per 1,000 population, and the proposed project would not adversely affect this ratio.

[2] The mean population per dwelling unit identified under the Brea Municipal Code Section 18.64.080 is based on 1988 Census figures and used only to calculate the parkland dedication. The DEIR did not use this mean population per dwelling unit in any other sections.

[3] 1,024 units x 3.5 persons per single family units) + (76 units x 2 persons per multifamily units) /1,000 population x 5 acres = 18.68 acres

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP REC-1.

Impact 5.16-2: The proposed project would not include recreational facilities that might have an adverse physical effect on the environment. [Threshold R-2]

The proposed project involves construction of a 13-acre sports park and a 2.1-acre staging area park. Impacts from constructing these park/recreational facilities are addressed throughout the EIR, and no additional adverse physical impacts on the environment would occur.

Level of Significance Before Mitigation: Less than significant impact.

5.16.5 Cumulative Impacts

The area of cumulative impacts considered is the city of Brea and its SOI. Other development projects in the city combined with the proposed project would create demands for recreational facilities. However, as discussed in Impact 5.16-1, the proposed project would exceed the required parkland dedication requirement from the Brea Municipal Code and would have a beneficial impact on park/recreation acreage in the city. Other cumulative projects in the city are also anticipated to meet Brea Municipal Code Section 18.64.080, which establishes regulations for the provision of park and recreational area. Therefore, when combined with other development projects, the proposed project would benefit the overall park acreages in the city and its SOI. The project impacts would not be individually significant but would contribute to the city's overall increase in parkland supply. Therefore, impacts would not be cumulatively significant.

5.16.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.16-1 and 5.16-2.

5.16.7 Mitigation Measures

No mitigation measures are required.

5.16.8 Level of Significance After Mitigation

Because no mitigation measures are required, impacts are the same as described in Section 5.16.6.

5.16.9 References

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5.17 TRANSPORTATION

This section of the draft environmental impact report (DEIR) evaluates the potential for implementation of the Brea 265 Specific Plan to result in transportation and traffic impacts in the City of Brea and its sphere of influence (SOI). The analysis in this section is based in part on the following technical report(s):

- *Traffic Circulation Analysis, Brea 265 Specific Plan, Brea, California*, Linscott, Law, & Greenspan, February 8, 2022 (Appendix N)
- *Vehicles Miles Traveled (VMT) Analysis for the Brea 265 Specific Plan, Brea,* Linscott, Law, & Greenspan, February 22, 2022 (Appendix O)

Complete copies of these studies are in Appendix N and Appendix O of this Draft EIR.

5.17.1 Environmental Setting

5.17.1.1 REGULATORY BACKGROUND

State Regulations

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analysis as part of CEQA compliance. 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 GHG emissions, as required by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32).

SB 743 eliminates auto delay, level of service (LOS), and other similar measures of vehicular capacity of traffic congestion as the sole basis for determining significant impacts under CEQA. Pursuant to the 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)).

Pursuant to SB 743, the Natural Resources Agency adopted revisions to the CEQA Guidelines to implement SB 743 on December 28, 2018. The revised CEQA Guidelines establish new criteria for determining the significance of transportation impacts. Under the new Guidelines, VMT-related metric(s) that evaluate the significance of transportation-related impacts under CEQA for development projects, land use plans, and transportation infrastructure projects are required beginning on July 1, 2020. The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements that require evaluation of LOS, but these metrics may no longer constitute the sole basis for determining transportation impacts under CEQA.

Regional Regulations

Southern California Association of Governments

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 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.

2020 Regional Transportation Plan/Sustainable Community Strategy (Connect SoCal)

Every four years SCAG updates the Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) for the six-county region that includes Los Angeles, San Bernardino, Riverside, Orange, Ventura, and Imperial counties.

On September 3, 2020, SCAG adopted the 2020-2045 RTP/SCS, *Connect SoCal*, which encompasses four principles that are important to the region's future—mobility, economy, healthy/complete communities, and environment. Connect SoCal explicitly lays out goals related to housing, transportation technologies, equity, and resilience in order to adequately reflect the increasing importance of these topics in the region. The RTP/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 emissions from transportation (excluding good movement). The RTP/SCS is meant to provide growth strategies that would achieve the regional greenhouse gas emissions reduction targets identified by the California Air Resources Board. However, the RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the RTP/SCS; instead, it provides incentives to governments and developers for consistency.

Orange County Transportation Authority Congestion Management Plan

The Orange County Transportation Authority (OCTA) is the subregional planning agency for Orange County. In June 1990, the Proposition 111 gas tax increase required California's urbanized areas (areas with populations of 50,000 or more), to adopt a Congestion Management Plan (CMP). The CMP is intended to link transportation, land use, and air quality decisions and to address the impact of local growth on the regional transportation system. Compliance with CMP requirements ensures a city's eligibility to compete for state gas tax funds for local transportation projects. The Orange County CMP was established in 1991, and the most recent CMP was adopted in 2017. The CMP requires that a traffic impact analysis (TIA) be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System. Per the CMP guidelines, this number is based on the desire to analyze any impacts that comprise 3 percent or more of the existing CMP highway system facilities' capacity. The CMP highway system includes specific roadways—including state highways and super streets (now known as smart streets)—and CMP arterial monitoring locations/intersections. Therefore, the CMP TIA requirements relate only to the designated CMP highway system.

California Department of Transportation

Intersections

Intersections within the City of Brea associated with freeway on-ramps and off-ramps fall under Caltrans jurisdiction. Caltrans is the primary state agency responsible for transportation issues. Caltrans approves the planning, design, and construction of improvements for all state-controlled facilities, including Imperial Highway and State Route 57 (SR-57). Caltrans has established standards for roadway traffic flow and developed procedures to determine if state-controlled facilities requirement improvements.

Local Regulations

City of Brea General Plan

The Circulation Element of the City of Brea General Plan provides goals and policies for efficient regional transportation facilities, the local circulation system, the public transportation system, pedestrian and bicycle facilities (Brea 2003). Applicable policies from the General Plan include:

Goal CD-10: Maintain an effective regional transportation network.

- **Policy CD-10.1.** Work continually with Caltrans to improve access to and from State Route 57.
- **Policy CD-10.3.** Cooperate with surrounding jurisdictions to ensure the efficient operation of the arterial network system.
- **Policy CD-10.4.** Work with Caltrans, the Orange County Transportation Authority, and surrounding jurisdictions to provide adequate capacity on regional routes for through traffic and to minimize cut-through traffic on the local street system.
- **Policy CD-10.6.** Recognize that Carbon Canyon Road will continue to serve high volumes of regional traffic despite its designation as a Modified Commuter. Thus, examine design solution alternatives that can improve the safety and efficiency of Carbon Canyon Road.

Goal CD-11: Provide a safe and efficient circulation system that meets the needs of the community.

- **Policy CD-11.2.** Establish Level of Service goals for designated City streets, and ensure that new development maintains these service levels.
- **Policy CD-11.3.** Plan neighborhood streets, pedestrian walks, and bicycle paths as a system of fully connected routes throughout the City.

Goal CD-13: Provide for an extensive, integrated, and safe bicycle, hiking, and pedestrian network throughout the community, and make Brea a pedestrian-friendly community.

- **Policy CD-13.4.** Require new developments to provide for the use of alternative modes of transit via internal trails or travel ways—public or private—for pedestrians and vehicles other than cars. New

developments shall include such features as well-designed sidewalks and parkways, bike lanes and paths, and dedicated bus turn-outs.

City of Brea Municipal Code

The municipal code includes regulations and standards that govern traffic, parking and loading, encroachments on the public right-of-way, and development in the City of Brea. Title 10, Vehicles and Traffic, includes general traffic regulations, traffic-control devices, operation of vehicles and bicycles, pedestrian regulations, and truck routes and terminals regulations.

Any modifications to the roadway networks, which includes driveways, curbs, and sidewalks, would be subject to approval by the City of Brea, and any construction work within the right-of-way of any public roadway would require the issuance of a permit by the City of Brea.

City of Brea Nexus Program

To satisfy the AB 1600 legislative requirement, development impact fees have been established for future traffic impacts in the City of Brea. Ensuring that every development project contributes a fair share of transportation improvements in the community, the City has introduced the "Transportation Improvement Nexus Program." In 2011, the Nexus Program was updated to reflect transportation needs and incorporate capacity improvements in an orderly fashion. The program ensures all future development in Brea contributes on a fair-share basis.

City of Brea Traffic Impact Fees

In July 1995, the Brea City Council adopted Ordinance 966, which established Traffic Impact Fees for all new development in Brea, and annexed portions of its SOI. Based on a study conducted in 2011, the City Council adopted Resolution 2011-096, which updated the impact fees. The updated fees became effective February 4, 2012. These fees are required, in part, by Orange County's Measure M, a transportation initiative passed by voters in 1990. More importantly, these fair-share-based fees will serve to offset, or mitigate, the traffic impacts caused by new development. The required Traffic Impact Fees must be paid prior to the issuance of any building permits.

In some cases, a developer may be required to make certain traffic improvements in addition to or in lieu of paying traffic impact fees. In this case, however, the total cost of traffic improvements and/or fees will not exceed the development's fair share toward mitigating its own impacts.

The City's current Traffic Impact Fee rate for residential land uses ranges from $1,203 to $1,974 per dwelling unit. For commercial, general mixed use, and office/industrial land uses, the City's rate ranges between $1.25 and $2.53 per gross square foot.

With respect to project impacts at intersections under the jurisdiction of the City of Brea and Caltrans, it should also be noted that under CEQA, a fair-share monetary contribution to a mitigation fund is adequate mitigation if the fund is tied to a reasonable plan that the relevant agency is committed to implementing.

However, the City and Caltrans do not have mitigation fund programs to which a development project in the City of Brea can contribute.

5.17.1.2 EXISTING CONDITIONS

Traffic Study Area

The following 22 study intersections have been identified for evaluation in collaboration with the City of Brea staff. The 22 intersections provide regional and local access to the study area and define the extent of the boundaries for this traffic analysis; the list identifies the applicable jurisdictions and/or City location. Figure 5.17-1, *Traffic Study Area Vicinity Map*, illustrates the traffic study locations and surrounding street system.

Key Study Intersections

1. State College Boulevard at Lambert Road (Brea)
2. State Route-57 (SR-57) Southbound (SB) Ramps at Lambert (Caltrans/Brea)
3. SR-57 Northbound (NB) Ramps at Lambert Road (Caltrans/Brea)
4. Pointe Drive at Lambert Road (Brea)
5. Wildcat Way/N. Associated Road at Lambert Road (Brea)
6. Santa Fe Road/Kraemer Boulevard at Lambert Road (Brea)
7. Sunflower Street at Lambert Road (Brea)
8. Valencia Avenue at Lambert Road/Carbon Canyon Road (Caltrans/Brea)
9. Santa Fe Road at Carbon Canyon Road (Caltrans/Brea)
10. State College Boulevard at Birch Street (Brea)
11. S. Associated Road at Birch Street (Brea)
12. N. Associated Road at Birch Street (Brea)
13. Kraemer Boulevard at Birch Street (Brea)
14. Valenica Avenue at Birch Street/Road Drive (Caltrans/Brea)
15. Rose Drive at Vesuvius Drive (Brea)
16. SR-57 SB Ramps at Imperial Highway (Caltrans/Brea)
17. SR-57 NB Ramps at Imperial Highway (Caltrans/Brea)
18. Associated Road at Imperial Highway (Caltrans/Brea)
19. Castlegate Lane/Placentia Avenue at Imperial Highway (Caltrans/Brea)
20. Kraemer Boulevard at Imperial Highway (Caltrans/Brea)
21. Valencia Avenue at Imperial Highway (Caltrans/Brea)
22. Rose Drive at Imperial Highway (Caltrans/Placentia)

Existing Street System

The principal local network of streets serving the project site includes Lambert Road, Birch Street, Imperial Highway, Kraemer Boulevard, Valencia Avenue, and Rose Drive. The following discussion provides a brief synopsis of these key streets. The descriptions are based on an inventory of existing roadway conditions. Figure 5.17-2, *Existing Roadway Conditions and Intersection Controls*, presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this traffic analysis. Figure 5.17-2 identifies the number of travel lanes for key arterials as well as intersection configurations and controls for the key study area intersections.

- **Lambert Road** is a six-lane, divided roadway west of Kraemer Boulevard and a four-lane, divided roadway east of Kraemer Boulevard, oriented in the east-west direction. Lambert Road borders the northeast side of the project site. The posted speed limit on Lambert Road is 50 miles per hour (mph). On-street parking is not permitted along this roadway. Traffic signals control the study intersections of Lambert Road at State College Boulevard, SR-57 Ramps, Pointe Drive, Wildcat Way/N Associated Road, Santa Fe Road/Kraemer Boulevard, Sunflower Street, and Valencia Avenue. Project access will be provided via a signalized driveway along Lambert Road.

- **Birch Street** is a four-lane, divided roadway oriented in the east-west direction. The posted speed limit on Birch Street is 50 mph. On-street parking is not permitted along this roadway. Traffic signals control the study intersections of Birch Street at State College Boulevard, S. Associated Road, N. Associated Road, Kraemer Boulevard, and Valencia Avenue.

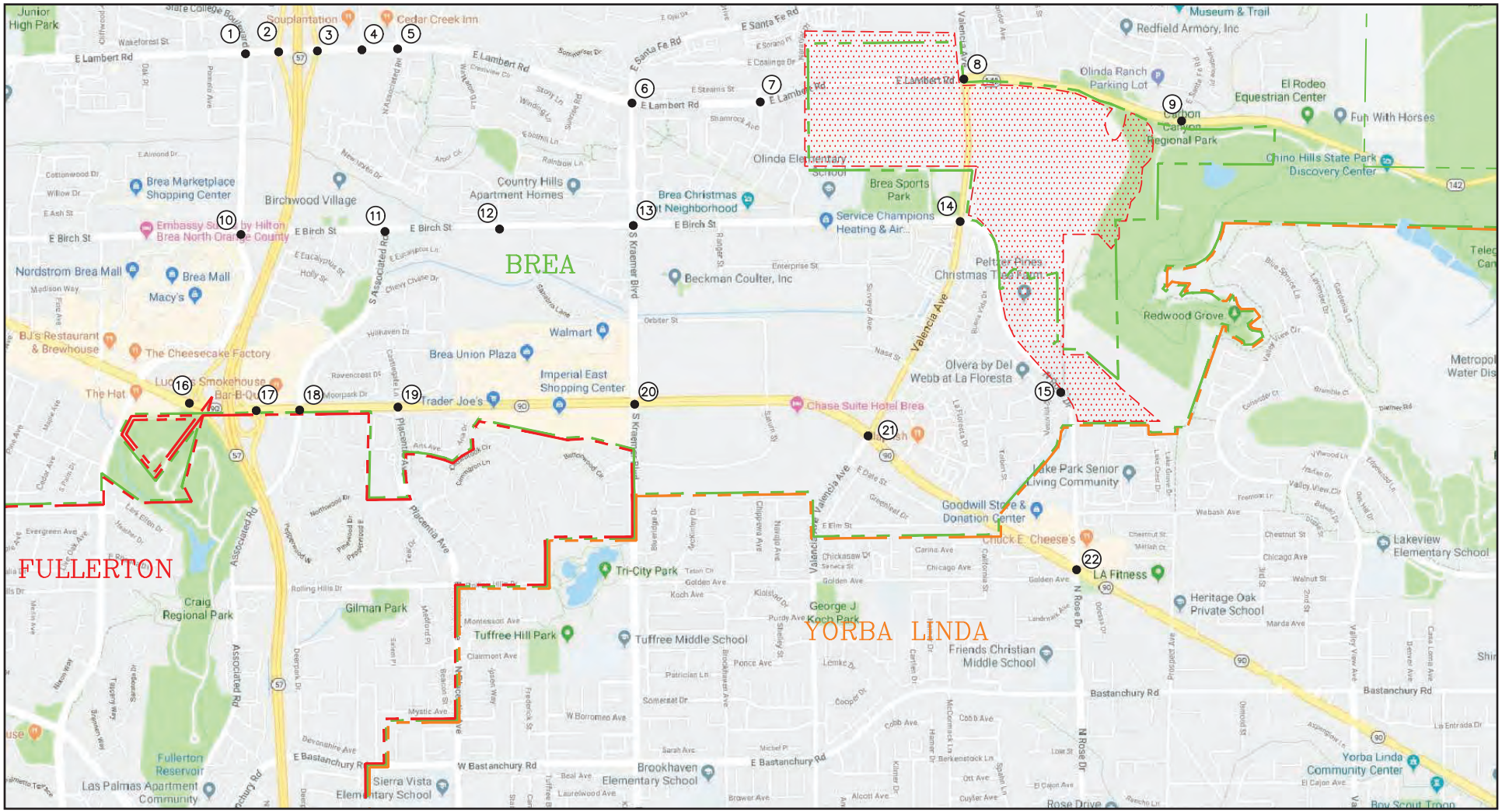
- **Imperial Highway** is a six-lane, divided roadway generally oriented in the east-west direction. The posted speed limit on Imperial Highway is 45 mph west of the SR-57 freeway and 50 mph east of the SR-57 freeway. On-street parking is not permitted along this roadway. A traffic signal controls the study intersections of Imperial Highway at State College Boulevard, SR-57 Ramps, Associated Road, Placentia Avenue, Kramer Boulevard, Valencia Avenue, and Rose Drive.

- **Kraemer Boulevard** is a six-lane, divided roadway north of Imperial Highway and a four-lane, divided roadway south of Imperial Highway oriented in the north-south direction. The posted speed limit is 50 mph north of Imperial Highway and 45 mph south of Imperial Highway, with no on-street parking permitted. Traffic signals control the study intersections of Kraemer Boulevard at Lambert Road, Birch Street, and Imperial Highway.

- **Valencia Avenue** is a four-lane, divided roadway that borders the project site to the west, generally oriented in the north-south direction. The posted speed limit is 45 mph north of Imperial Highway and 40 mph south of Imperial Highway. Parking is not permitted on either side of the roadway. Traffic signals control the study intersections of Valencia Avenue at Lambert Road, Birch Street/Rose Drive, and Imperial Highway. Project access will be provided via a signalized driveway along Valencia Avenue.

- **Rose Drive** is a two-lane, divided roadway that borders the southern portion of the project site. The posted speed limit is 40 mph. On-street parking is not permitted on either side of the roadway. Traffic signals control the study intersections of Rose Drive at Valencia Avenue, Vesuvius Drive, and Imperial Highway. Project access will be provided at an unsignalized driveway along Rose Drive and at the signalized intersection with Vesuvius Drive.

Figure 5.17-1 - Traffic Study Area Vicinity Map
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(#) = STUDY INTERSECTION
= PROJECT SITE

0 2,000
Scale (Feet)

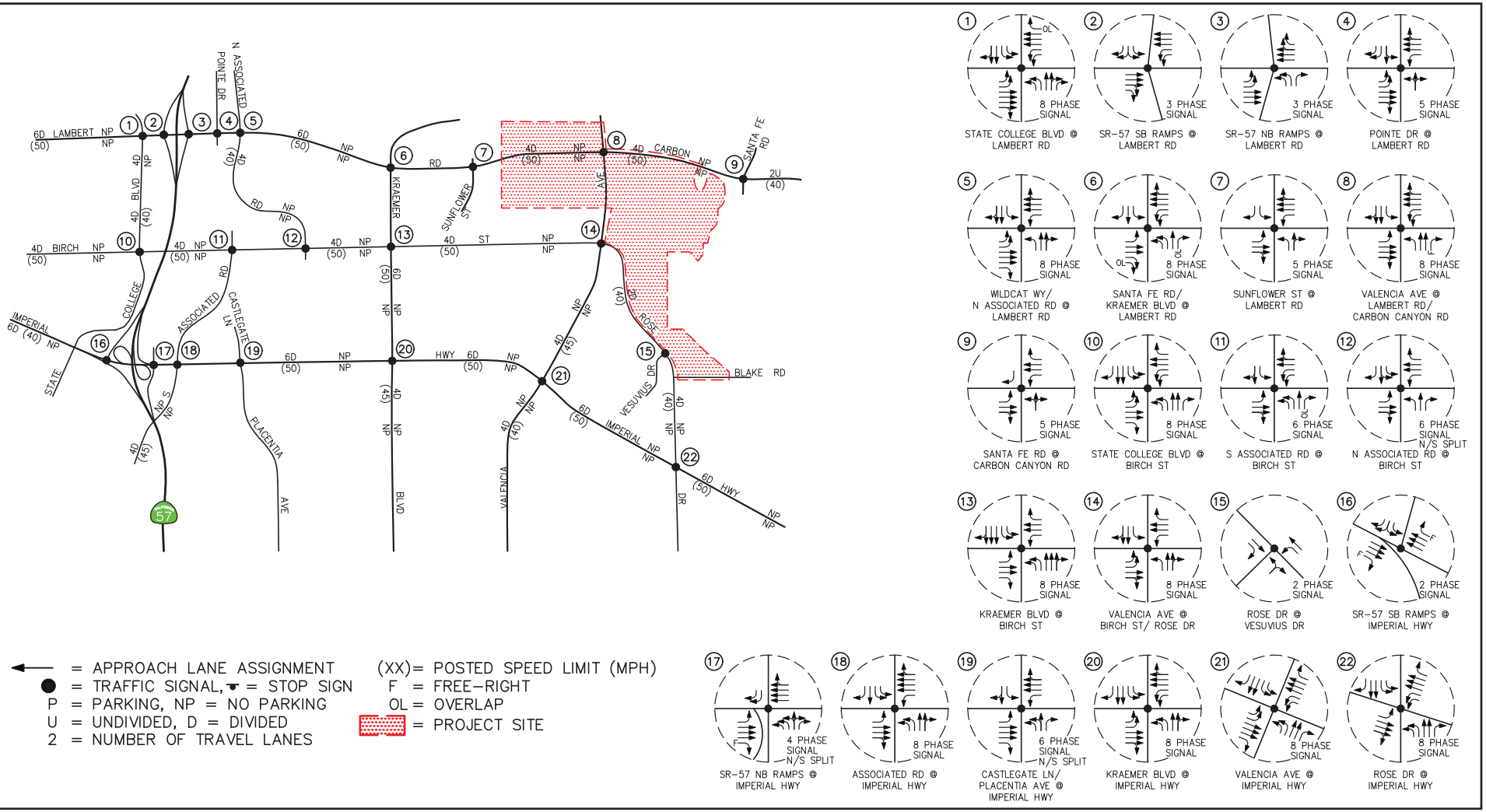
Source: Linscott, Law, & Greenspan Engineers, 2022

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Figure 5.17-2 - Existing Roadway Conditions and Intersection Controls

5. Environmental Analysis



NO TO SCALE

Source: Linscott, Law, & Greenspan Engineers, 2022

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Existing Public Transit

Public transit bus service is provided in the project area by the Orange County Transportation Authority. Five OCTA bus routes operate within the vicinity of the project site on Birch Street, Kraemer Boulevard, and Rose Drive:

- **OCTA Route 26 (Fullerton to Yorba Linda).** Route 26 is a local bus route serving Placentia, Fullerton, and Buena Park. The major routes of travel include Yorba Linda Avenue. Nearest to the project site are bus stops at the intersection of Rose Drive at Yorba Linda Boulevard. Route 26 operates on approximate 30-minute headways during weekdays and 45-minute headways on weekends.

- **OCTA Route 57 (Brea to Newport Beach):** Route 57 is a local bus route serving Brea, Fullerton, Anaheim, Orange, Santa Ana, Costa Mesa, and Newport Beach. The major routes of travel include State College Boulevard. Nearest to the project site are bus stops at the intersection of State College Boulevard at Birch Street. Route 57 operates on approximate 15-minute headways during the weekdays and weekends.

- **OCTA Route 71 (Yorba Linda to Newport Beach).** Route 71 is a local bus route serving Yorba Linda, Placentia, Anaheim, Orange, Tustin, Santa Ana, Irvine, Costa Mesa, and Newport Beach. The major routes of travel include Rose Drive and Red Hill Avenue. Nearest to the project site are bus stops at the intersection of Rose Drive at Yorba Linda Boulevard. Route 71 operates on approximate 45-minute headways during weekdays and 60-minute headways on weekends.

- **OCTA Route 129 (La Habra to Anaheim).** Route 129 is a community bus route serving Anaheim, Placentia, Yorba Linda, Brea, and La Habra. The major routes of travel include La Habra Boulevard, Brea Boulevard, Birch Street, and Kraemer Boulevard. Nearest to the project site are bus stops at the intersection of Birch Street at Kraemer Boulevard. Route 129 operates on approximate 55-minute headways during weekdays and 60-minute headways on weekends.

- **OCTA Route 153 (Brea to Anaheim).** Route 153 is a community bus route serving Brea, Placentia, Fullerton, Anaheim, and Orange. The major routes of travel include Placentia Avenue. Nearest to the project site are bus stops at the intersection of Birch Street at S. Associated Road. Route 153 operates on approximate 60-minute headways during weekdays and weekends.

Figure 3-2 of the Traffic Study, "OCTA Routes" (see Appendix N to the DEIR), graphically illustrates the transit routes of OCTA within the vicinity of the project site. Figure 3-3 of the Traffic Study, "Transit Stop Locations," identifies the location of the existing bus stops in proximity to the project site.

Existing Bikeway Plan

The City of Brea promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bikeway Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the city. The City of Brea Bike Plan (existing and proposed) is shown on

Figure 5.17-3, *City of Brea Bike Plan*. In close proximity to the site, an existing Class II bike lane is provided along Rose Drive. There is a proposed Class I bike path along Carbon Canyon Road and Valencia Avenue.

Existing Traffic Volumes

During the COVID-19 pandemic, a decrease in traffic occurred due to many people staying home, and it was not possible to collect valid traffic counts in 2020 and 2021 to establish baseline conditions that reflect traffic conditions without the pandemic . Therefore, to establish "baseline" traffic conditions, historical data was retrieved from Year 2018-2019 AM and PM peak-hour traffic counts at all 22 study locations, as well as year 2018 daily traffic counts at 25 roadway segments. To establish existing "baseline" traffic conditions, an annual growth factor of 1 percent per year was applied to the Year 2018-2019 conditions to establish Year 2021 pre-COVID-19 baseline traffic conditions.

Figure 3-5 and Figure 3-6 of the Traffic Study (Appendix N) illustrate the existing Year 2021 AM and PM peak hour traffic volumes at the 22 study intersections evaluated in the Traffic Study, respectively. Figure 3-6 also presents the existing average daily traffic volumes for the 25 roadway segments in the vicinity of the proposed project.

5.17.2 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:

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 § 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).

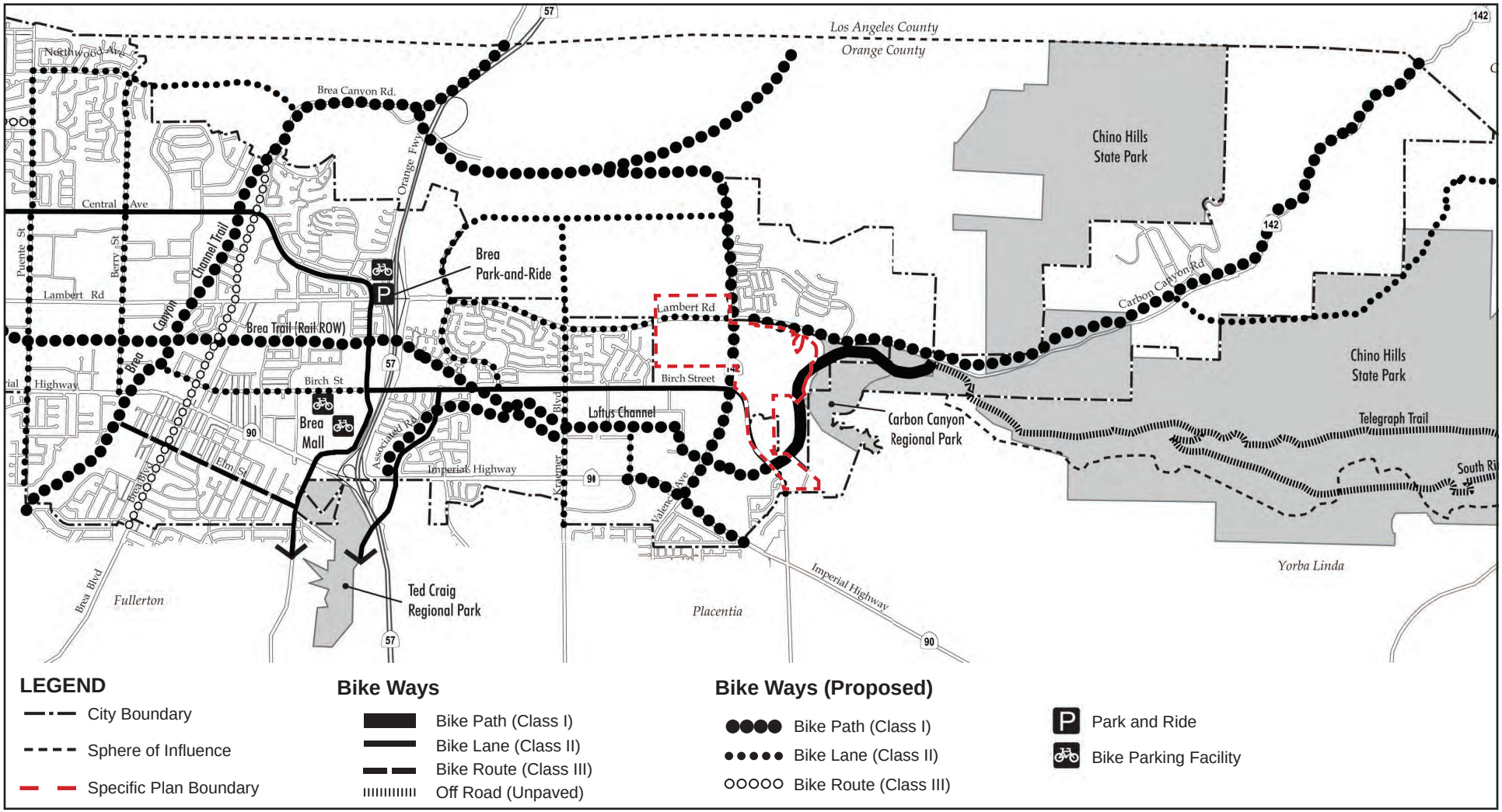
T-4 Result in inadequate emergency access.

5.17.3 Plans, Programs, and Policies

Project Design Features

PPP T-1 As a part of the development of the proposed project, vehicular access to the project site from the public streets bordering the subject property would be provided as shown on Figure 3-14, *Circulation Plan*, via one full-access, signalized driveway on Lambert Road; one full-access, signalized driveway on Valencia Avenue; one full-access, signalized driveway on Rose Drive; and one full-access, signalized driveway at the existing intersection of Rose Drive at Vesuvius Drive. Vehicular circulation internal to the various proposed neighborhoods would be provided by a system of local residential streets.

Figure 5.17-3 - City of Brea Bike Plan
5. Environmental Analysis



Source: Linscott, Law, & Greenspan Engineers, 2019

5. Environmental Analysis
TRANSPORTATION

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PPP T-2 In conjunction with the access improvements identified in PPP T-1, inclusive of project-sponsored traffic signals, proposed improvements to be completed as a part of the proposed project along Lambert Road, Carbon Canyon Road, Valencia Avenue, and Rose Drive bordering the subject property include the following Project Design Features:

- Lambert Road from Valencia Avenue west along project frontage to just east of Sunflower Street—Widen and construct Lambert Road along project frontage to Major Arterial Highway Standards per the City's requirements, providing three 12-foot travel lanes and an 8-foot bike lane in each direction, separated by a 14-foot median within 88 feet of paved width and a right-of-way of 120 feet. Lambert Road currently includes two travel lanes in each direction midblock along the project frontage.
- Carbon Canyon Road (SR-142) from Valencia Avenue east along project frontage—Widen and construct the south side of Carbon Canyon Road along project frontage to ultimate half-section width per the City's Major Arterial Highway standard and provide three 12-foot travel lanes and an 8-foot bike lane in the eastbound direction, separated by a 14-foot median within 88 feet of paved width and a right-of-way of 120 feet. Carbon Canyon Road currently includes three travel lanes, narrowing to two lanes in the easterly direction along the project frontage.
- Valencia Avenue (SR-142) from Lambert Road/Carbon Canyon Road south to along project frontage—This state route is currently improved to the City's Primary Arterial standards, and now provides two travel lanes and an 8-foot bike lane in each direction, separated by a 14-foot median within 84 feet of paved width and a right-of-way of 100 feet; no additional travel lanes are proposed with the project.
- Rose Drive from Valencia Avenue south along project frontage to Vesuvius Drive—Widen and construct the east side of Rose Drive along project frontage to Primary Arterial Standards per the City's requirements, providing two travel lanes and an 8-foot bike lane in the northbound, separated by a median within 42 feet of half-paved width and a 50-foot half right-of-way. To achieve two southbound travels lane along the project's entire frontage, modifications to the future median and/or lane widths may be needed. Subject to the City's review/approval, it is expected that the design of the second southbound through-lane will require motorists to merge left to continue through, and the lane will be terminated as a right-turn lane at the intersection of Rose Drive and Vesuvius Drive to align with the existing southbound right-turn lane at this intersection. Rose Drive currently includes one travel lane in each direction and bike lanes, separated by a painted median.

PPP T-3 The project applicant will prepare a sight distance analysis at all project driveways (Lambert Road at Driveway A, Valencia Avenue at Driveway B, Rose Drive at Driveway C, and Rose Drive at Vesuvius Drive/Driveway D) to ensure adequate sight distance is provided, at a minimum, per the Caltrans Highway Design Manual.

PPP T-4 A site-specific construction worksite staging and traffic control plan will be prepared and submitted to the City of Brea for review and approval prior to the start of any construction work. This plan will include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons, lights, warning beacons, temporary traffic signals, warning signs). The proposed project will be required to comply with the City-approved plan measures.

PPP T-5 The project applicant is required to pay development impact fees to the City of Brea pursuant to the City's AB 1600 Transportation Improvement Nexus Program (Ordinance 996). Based on a transportation improvement nexus program study conducted in 2011, the City Council adopted Resolution 2011-096, which updated the impact fees, effective February 4, 2012. Fair-share fees offset or mitigate the cumulative traffic impacts caused by new development. The program ensures all future development in the City of Brea contributes on a fair-share basis. The recommended improvements subject to fair-share contribution by the proposed project are as follows:

Year 2035 and Year 2045 Conditions

- **No. 8, Valencia Avenue at Lambert Road/Carbon Canyon Road:** Widen and/or restripe the northbound approach to provide a second exclusive northbound left-turn lane. Widen and/or restripe the eastbound approach to provide an exclusive eastbound right-turn lane. Widen and/or restripe the westbound approach to provide a third exclusive westbound left-turn lane. Widen the southbound departure to accommodate three receiving lanes. Modify the existing traffic signal and provide eastbound right-turn overlap phasing. This improvement will require design concurrence from Caltrans, and construction will occur under standard Caltrans permitting process.
- **No. 14, Valencia Avenue at Birch Street/Rose Drive:** Widen and/or restripe the southbound approach to provide a second exclusive southbound left-turn lane. Modify the existing traffic signal and provide westbound right-turn overlap phasing. This improvement will require design concurrence from Caltrans, and construction will occur under standard Caltrans permitting process.
- **No. 15, Rose Drive at Vesuvius Drive/Driveway D:** Restripe the southbound exclusive right-turn as a shared southbound through/right-turn lane. Widen to provide a second southbound departure lane. Modify the existing traffic signal.
- **No. 18, Associated Road at Imperial Highway:** Restripe the southbound exclusive right turn as a shared southbound through/right-turn lane. Modify the existing traffic signal. This improvement will require design concurrence from Caltrans and construction will occur under standard Caltrans permitting process.
- **No. 22, Rose Drive at Imperial Highway:** Restripe the second southbound through lane as a shared southbound left/through lane. Modify the existing traffic signal and

provide northbound and southbound split phasing and westbound right-turn overlap phasing. Remove crosswalk on the east leg. This improvement will require design concurrence from Caltrans, and construction will occur under standard Caltrans permitting process.

PPP T-6 The gated entryway at the intersection of Valencia Avenue/B Street (B Driveway) will be set back a minimum distance of 40 feet from the project site's property line along Valencia Avenue to the front of the gate. The gated entryway at the intersection of Rose Drive at P Street (C Driveway) will be set back a minimum distance of 60 feet from the project site's property line along Rose Drive to the front of the gate. The design of the gate entry will be submitted to the City of Brea Public Works Department for review and approval.

5.17.4 Environmental Impacts

5.17.4.1 METHODOLOGY

Project Traffic Generation

The trip generation potential of the proposed project was estimated using trip rates in the 11th edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE). Table 5.17-1, *Project Traffic Generation Rates and Forecast,* summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed project and also presents the project's forecast peak hour and daily traffic volumes.

The proposed project is forecast to generate 9,351 daily trips, with 634 trips (182 inbound, 452 outbound) in the AM peak hour and 893 trips (542 inbound, 351 outbound) in the PM peak hour on a "typical" weekday.

Table 5.17-1 Project Traffic Generation Rates and Forecast

Description	Unit	Daily 2-way	AM Peak			PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
Trip Generation Rates								
210: SF Detached	Trip end per DU	9.43	26%	74%	0.70	63%	37%	0.94
215: SF Attached	Trip end per DU	7.20	31%	69%	0.48	57%	43%	0.57
220: MF Housing (Low-Rise[1])	Trip end per DU	6.74	24%	76%	0.40	63%	37%	0.51
488: Soccer Complex[2]	Trip end per Field	71.33	61%	39%	0.99	66%	34%	16.43
Proposed Zone 1								
SF Homes	105 DU	990	19	55	74	62	37	99
Proposed Zone 2								
MF/SF Attached	507 DU	3,650	75	168	243	165	124	289
Sports Park	6 soccer fields	428	4	2	6	65	34	99
Zone 2 Subtotal	-	4,078	79	170	249	230	158	388
Proposed Zone 3								
SF Homes	345 DU	3,253	63	179	242	204	120	324
MF/SF Attached	143 DU	1,030	21	48	69	46	36	82

Table 5.17-1 Project Traffic Generation Rates and Forecast

Description	Unit	Daily 2-way	AM Peak			PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
Zone 3 Subtotal	-	4,283	84	227	311	250	156	406
Total Proposed Project	**1,100 DU, 6 fields**	**9,351**	**182**	**452**	**634**	**542**	**351**	**893**

Source: LLG 2022a.
[1] Low-Rise Multifamily Housing consists of buildings that are less than 3 levels.
[2] A soccer complex is an outdoor facility that is used for nonprofessional soccer games. It may consist of multiple fields. The size of each field within the land use may vary to accommodate games for different age groups. Onsite amenities may include stadium seating, a fitness trail, an activities shelter, aquatic center, picnic grounds, basketball and tennis courts, and a playground.

Project Traffic Distribution and Assignment

For the purposes of traffic analysis, the project site was divided into five zones: Zone 1, Zone 2A, Zone 2B, Zone 3A, and Zone 3B, as shown on Figures 5.17-4 through 5.17-6b. Figure 5.17-4, *Project Trip Distribution Pattern – Zone 1*; Figure 5.17-5a, *Project Trip Distribution Pattern – Zone 2A*; Figure 5.17-5b, *Project Trip Distribution Pattern – Zone 2B*; Figure 5.17-6a, *Project Trip Distribution Pattern – Zone 3A*; and Figure 5.17-6b, *Project Trip Distribution Pattern – Zone 3B*; present the traffic distribution pattern for the zones. Project traffic volumes, both entering and exiting the site, have been distributed and assigned to the adjacent street system based on model runs for selected zones and were further refined based on the following considerations:

- Location of site access points in relation to the surrounding street system.
- The site's proximity to major traffic carriers and regional access routes.
- Physical characteristics of the circulation system, such as lane channelization and presence of traffic signals that affect travel patterns.
- Presence of traffic congestion in the surrounding vicinity.
- Ingress/egress availability at the project site.
- Discussions with City staff.

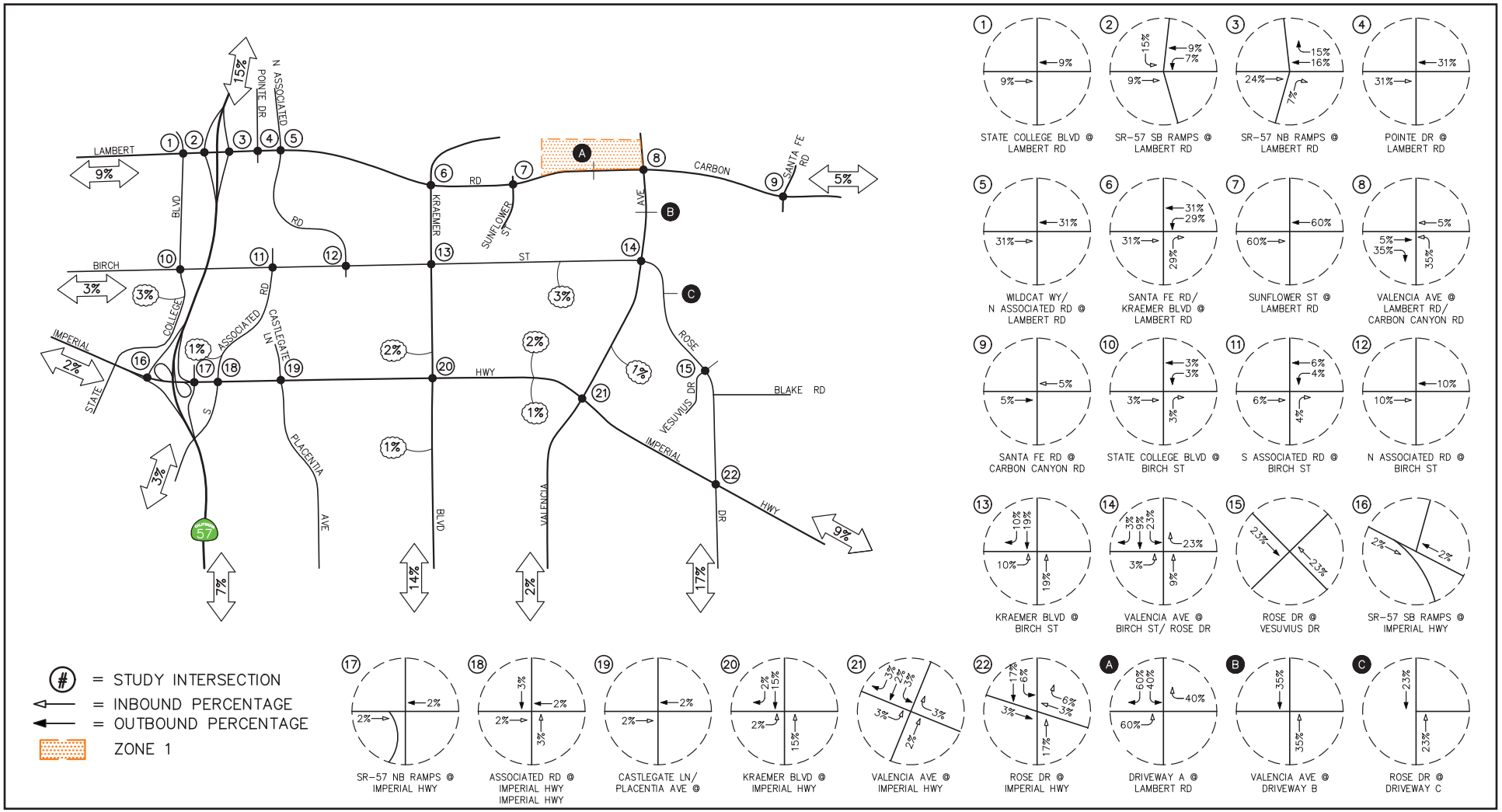
The anticipated near-term AM and PM peak hour project traffic volumes associated with the proposed project are presented in Traffic Study Figure 5-6, "AM Peak Hour Project Traffic Volumes," and Figure 5-7, "PM Peak Hour and Daily Traffic Volumes" (see Appendix N to the DEIR). Figure 5-7 also presents the weekday daily project traffic volumes.

VMT Thresholds

As described in Section 5.17.1.1, *Regulatory Background,* under "Senate Bill 743," as of July 1, 2020, auto delay (traffic congestion) can no longer be used as the criteria for transportation analysis under CEQA. Automobile traffic impacts have historically been analyzed with LOS methodologies based on roadway capacity metrics (volume/capacity). LOS has been replaced with a new metric—VMT.

Figure 5.17-4 - Project Trip Distribution Pattern - Zone 1

5. Environmental Analysis



NO TO SCALE

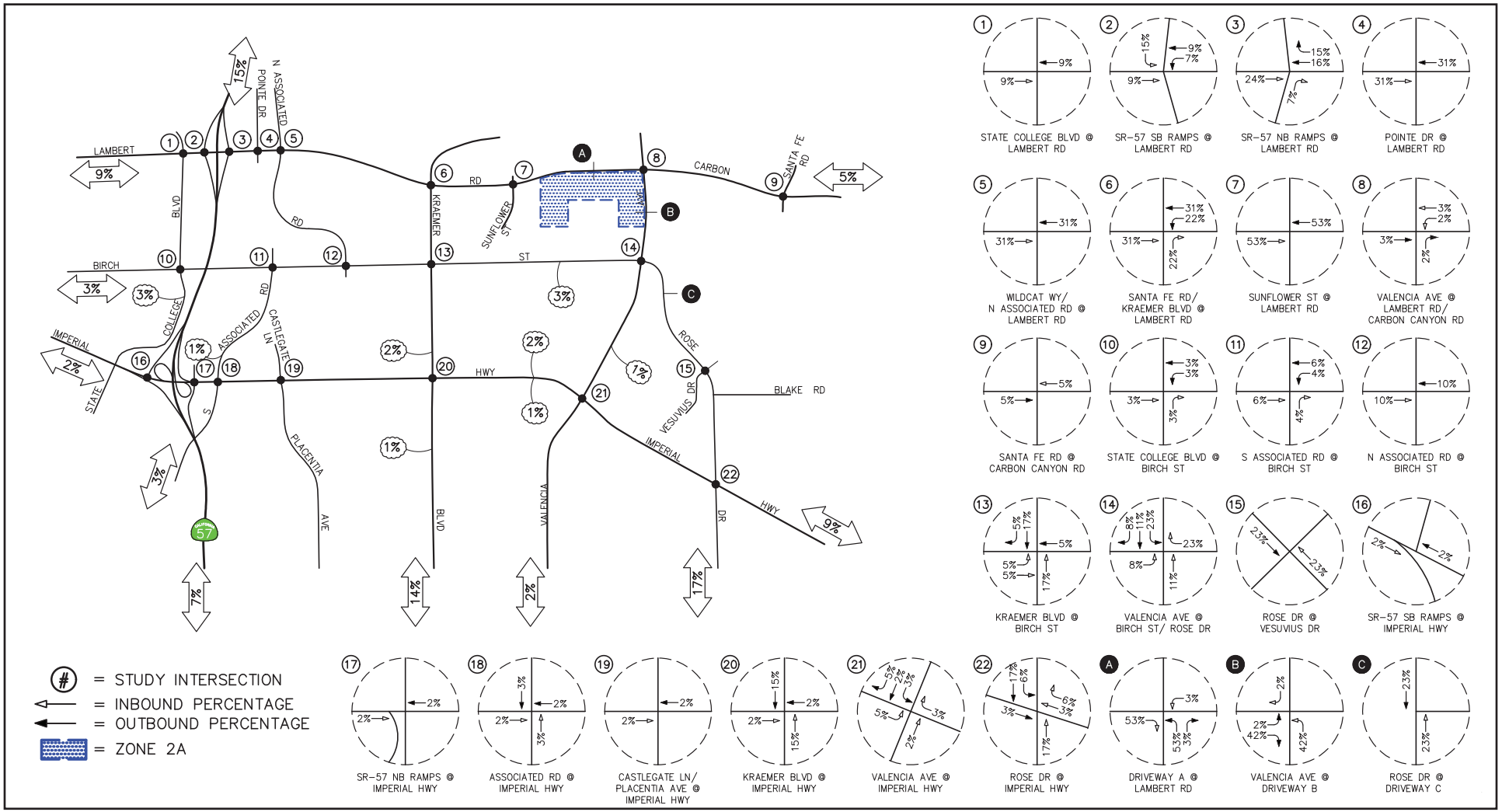
Source: Linscott, Law, & Greenspan Engineers, 2022

5. Environmental Analysis
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Figure 5.17-5a - Project Trip Distribution Pattern - Zone 2A

5. Environmental Analysis



NO TO SCALE

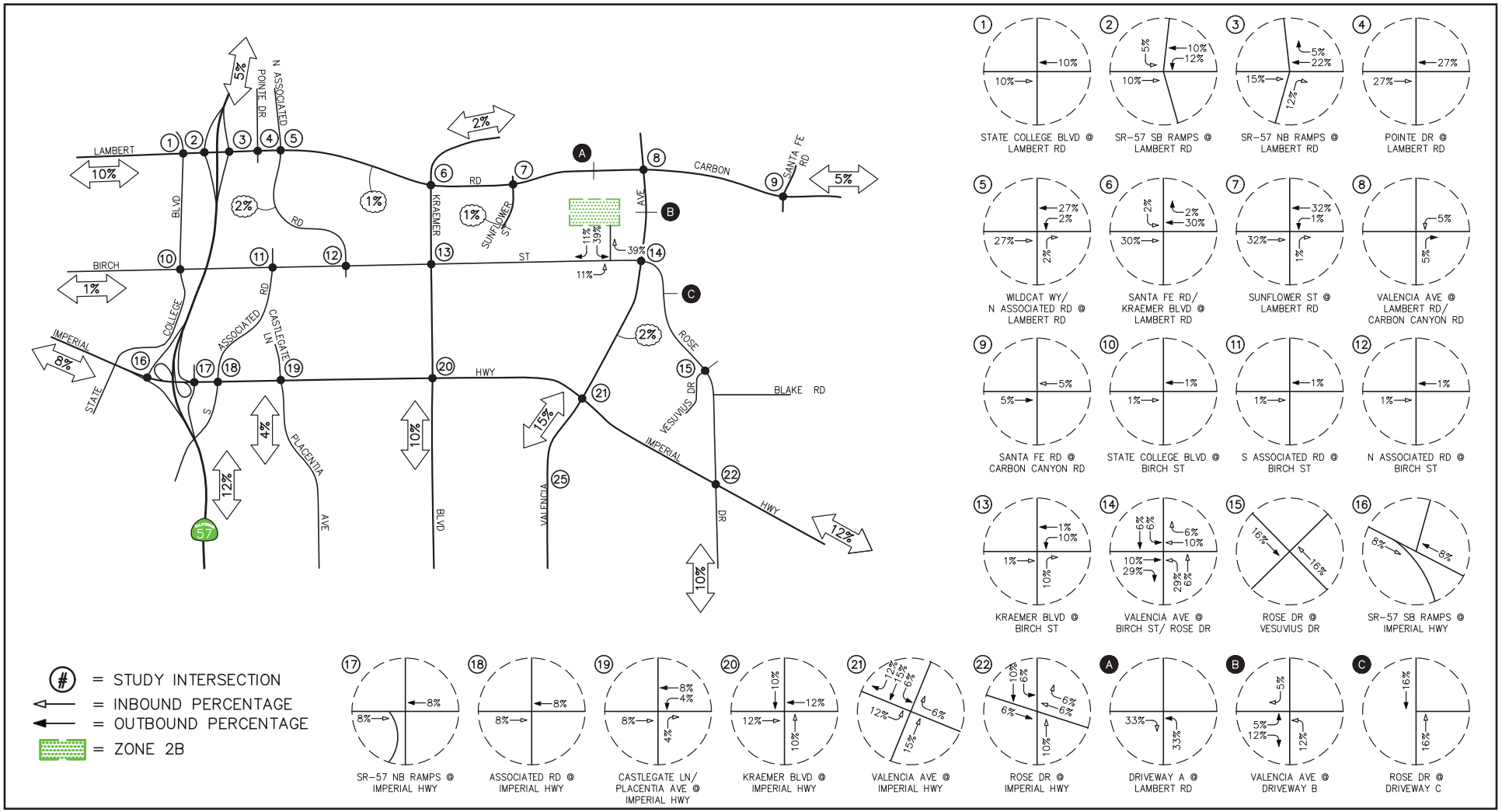
Source: Linscott, Law, & Greenspan Engineers, 2022

5. Environmental Analysis
TRANSPORTATION

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Figure 5.17-5b - Project Trip Distribution Pattern - Zone 2B

5. Environmental Analysis



NO TO SCALE

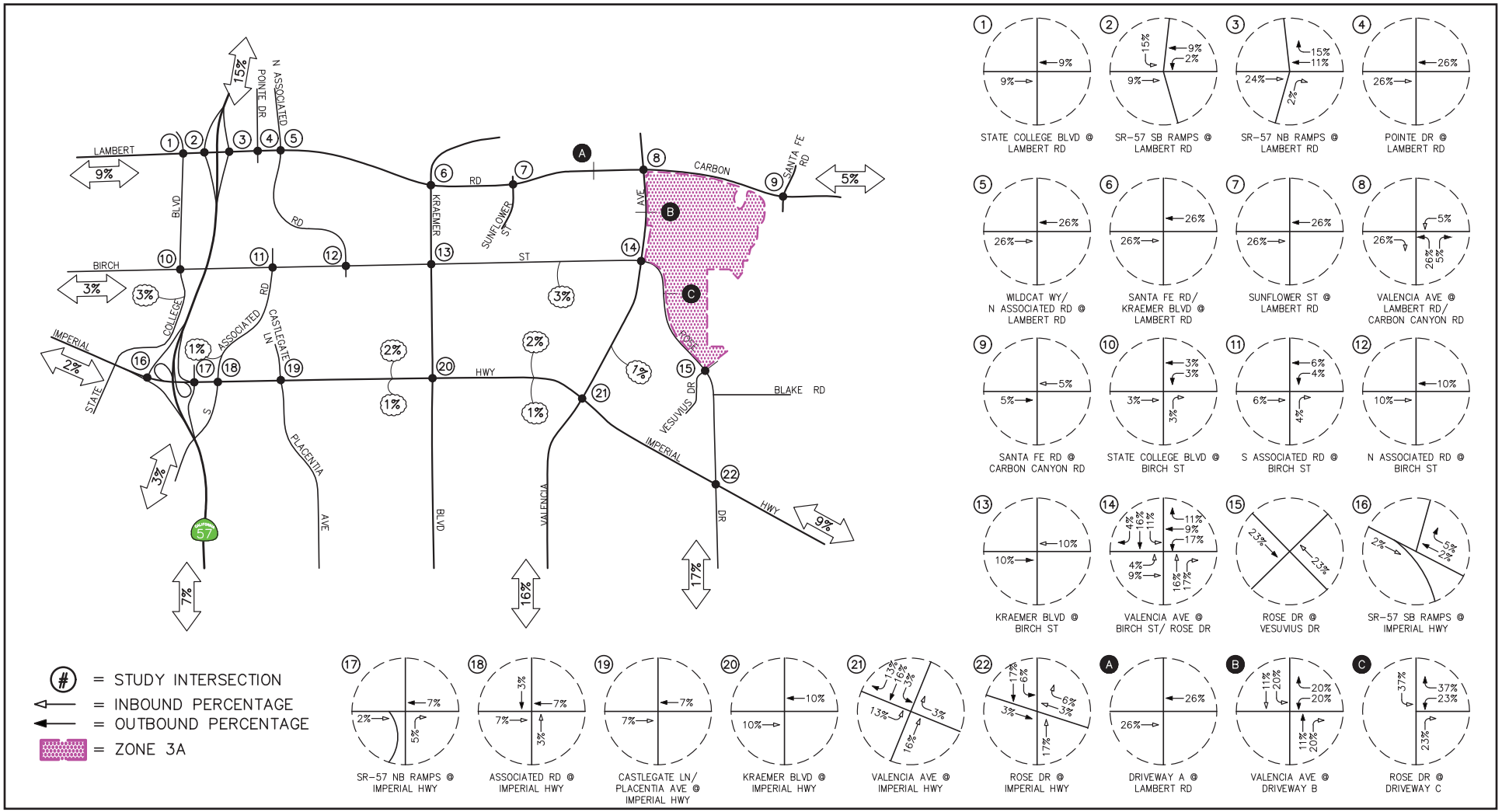
Source: Linscott, Law, & Greenspan Engineers, 2022

5. Environmental Analysis
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Figure 5.17-6a - Project Trip Distribution Pattern - Zone 3A

5. Environmental Analysis



NO TO SCALE

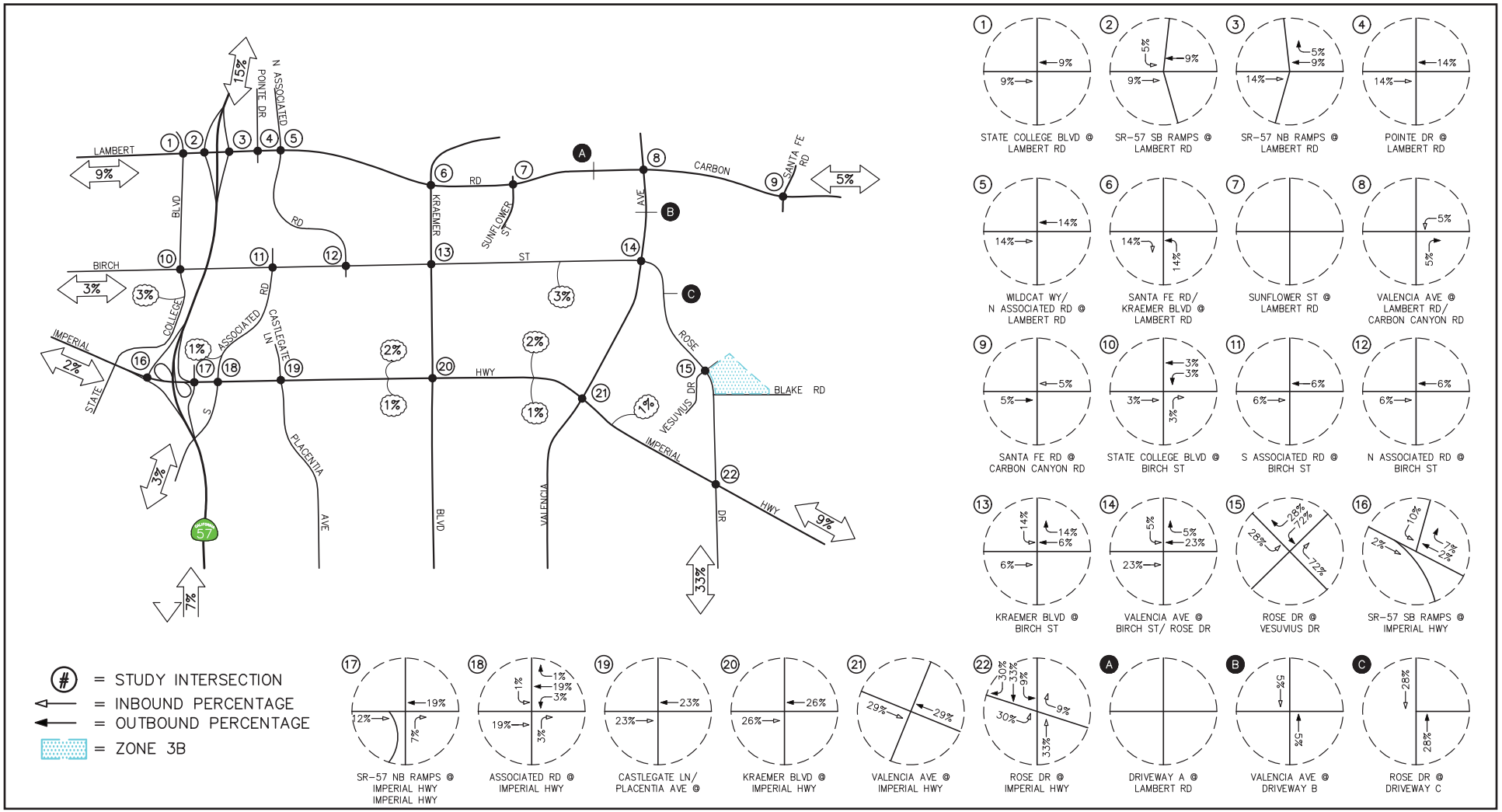
Source: Linscott, Law, & Greenspan Engineers, 2022

5. Environmental Analysis
TRANSPORTATION

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Figure 5.17-6b - Project Trip Distribution Pattern - Zone 3B

5. Environmental Analysis



NO TO SCALE

Source: Linscott, Law, & Greenspan Engineers, 2022

5. Environmental Analysis
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The City of Brea adopted significance thresholds and methodology to comply with SB 743 on October 6, 2020. The following lists the various screening methods outlined in the City's adopted Transportation Impact Analysis Guidelines:

- **Transit Priority Area (TPA) Screening.** Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may not be appropriate if the project:

  1. Has a Floor Area Ratio (FAR) of less than 0.75.

  2. Includes more parking for use by residents, customers, or employees of the project than required by the City.

  3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the City of Brea, with input from the Southern California Association of Governments [SCAG]).

  4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

  Based on currently available transit service in Brea, there are no identified TPAs in the city.

- **Low VMT Area Screening.** Residential and office projects within a low-VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary.

- **Project Type Screening.** The following uses can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

  - Local parks
  - Local-serving retail uses less than 50,000 square feet
  - Community institutions (public libraries, fire stations, local government)
  - Affordable, supportive, or transitional housing
  - Project generating less than 110 daily vehicle trips

For projects that exceed the screening criteria:

- **Project-Level Impacts** would result in a significant project-generated VMT impact if the baseline, or cumulative, project-generated VMT per service population exceeds the City of Brea General Plan Buildout VMT per service population.

- **Cumulative Impacts** under the no-project condition shall reflect the adopted RTP/SCS, so if a project is consistent with the SCAG RTP/SCS, its cumulative impacts on VMT shall be considered less than significant.

Multimodal Facility Impacts

A significant impact would occur to transit, bicycle, and/or pedestrian facilities if the project would conflict with a project, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Orange County Transportation Authority Significance Thresholds

Most local agencies in Orange County and Caltrans have adopted LOS standards of 'C' or 'D' in an effort to maintain a desired LOS for the local circulation system. To address CMP legislative requirements and establish a minimum LOS along the regional system of roadways and highways in the county, OCTA has approved the following threshold:

- The CMP requires that a traffic analysis be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System.

Future Traffic Conditions

Ambient Traffic Growth

Horizon-year background traffic growth estimates have been calculated using an ambient traffic growth factor, which is intended to include unknown and future related projects in the study area as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at 1 percent per year. Applied to the Year 2021 existing traffic volumes, this factor results in a 14 percent growth in existing volumes to the near-term horizon Year 2035.

Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (related projects) within the area of the project site has been researched at the City of Brea, City of Fullerton, City of Placentia, City of Yorba Linda, and City of Chino Hills. With this information, the proposed project can be evaluated within the context of the cumulative setting.

There are 23 related projects in the city, two related projects in Fullerton, and eight related projects in Chino Hills that are being processed for approval. These 33 related projects have been included as part of the cumulative background setting. Table 5.17-2, *Cumulative Projects Summary and Traffic Generation Forecast,* summarizes the trip generation potential for all 33 related projects on a daily and peak hour basis for a typical weekday. Figure 6-1 of the Traffic Study (see Appendix N) shows the locations of these cumulative projects. As shown in Table 5.17-2, the related projects are expected to generate 38,572 daily trips, with 3,006 trips (1,547 inbound, 1,459 outbound) anticipated during the AM peak hour and 3,517 trips (1,792 inbound, 1,725 outbound) during the PM peak hour.

Table 5.17-2 Cumulative Projects Summary and Traffic Generation Forecast

Name	Location	Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
City of Brea									
1. CVS	390 N. Brea Boulevard	13,000 SF Pharmacy w/ Drive-Through 1,700 SF Coffee Shop w/ Drive-Through	1,948	59	58	117	59	58	117
2. Brea Place	State College Boulevard at Birch Street	653 DU Apartments, 5,000 SF Office, 150 Room Hotel	6,364	122	271	393	300	199	499
3. Downtown Hotel	220 S. Brea Boulevard	116 Room Hotel, 4,000 SF High Turnover Sit-Down Restaurant	1,201	45	34	79	44	37	81
4. Mercury Apartments	Southeast corner of Berry Street at Mercury Lane	120 DU Apartments	653	11	32	43	32	21	53
5. Brea Mall Mixed-Use Project	1065 Brea Mall	Demolish existing 161,990 SF Sears department store, and construct 119,415 SF additional retail space, a 128,000 SF health club, and 383 DU medium density residential units	4,487	176	172	348	303	158	461
6. Brea Plaza	409-477 S. Associated Rd, and 1555, 1609, 1623, 1643 E. Imperial Highway	Demolition of an existing 18,450 SF movie theater and the construction of a mixed-use development w/ 21,355 SF of office space and 229 apartment units	-1,680	39	61	100	-33	-27	-60
7. Central Park Village	340-420 W. Central Avenue	62 DU townhomes and 20 DU apartments	553	8	25	33	26	16	42
8. New Industrial Building	201 N. Berry Street	109,125 SF warehouse	247	22	5	27	9	22	31
9. Alvero Assisted Living	251 S. Randolph Avenue	80 rooms with 82 beds residential care facility	213	9	6	15	8	12	20
10. Extra Space Self Storage	2700 E. Imperial Highway	126,546 self-storage facility	183	6	5	11	9	10	19
11. Brea Imperial Center	391 S. State College Boulevard	5,000 SF restaurant, 2,300 SF bagel/coffee shop, 1,600 SF café, 3,867 SF In-N-Out, 28,145 SF retail, and 4,400 SF bank to replace existing land uses which include 4,050 SF food uses, 24,481 SF retail, 4,400 SF bank, 2,325 SF medical office, 10,074 SF health studio spa.	1,315	58	60	118	56	37	93
12. Transwestern	285 S. Berry Street and 711 W. Imperial Highway	126,797 SF warehouse	288	24	7	31	10	26	36
13. The Phoenix Club	375 W. Central Avenue	8,350 SF restaurant with banquet hall	805	40	32	72	26	17	43

Table 5.17-2 Cumulative Projects Summary and Traffic Generation Forecast

Name	Location	Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
14. Aldi Grocery Store	2395 E. Imperial Highway	21,106 SF grocery store	1,783	31	23	54	72	72	144
15. Starbucks with Drive-Thru	2 Pointe Drive	2,400 SF coffee shop with drive-thru	961	52	51	103	35	35	70
16. Lambert Road Condos	700-800 W. Lambert Road	24 DU condominiums	162	2	8	10	8	4	12
17. Brea Metro Office Condos	330 E. Lambert Road	33 DU condominiums	222	3	10	13	11	6	17
18. Father's House	245 W. Birch Street	299 seat religious assembly	269	13	8	21	14	16	30
19. Cha Cha's Expansion	110 W. Birch Street	Existing restaurant expansion of 2,710 SF	262	13	10	23	9	5	14
20. Western Realco	2929 E. Imperial Highway	131,500 SF industrial building	299	25	8	33	10	27	37
21. CAMP Transformation	910 E. Birch Street, Suite 250	4,100 SF Fitness Center	140	3	2	5	8	6	14
22. Brea Express Wash	300 S. Brea Boulevard	4,254 SF express car wash	600	16	16	32	30	30	60
23. Raising Cane's	255 E. Imperial Highway	Demolish existing 9,588 SF office building and construction of a 4,047 SF fast food restaurant with drive-through	1,727	0	0	0	61	48	109
City of Fullerton									
24. 3105 Yorba Linda Boulevard	3105 Yorba Linda Boulevard	4,840 SF drive-through car wash	690	18	18	36	35	34	69
25. Beckman Business Center	4300 North Harbor Boulevard	522,250 SF Warehousing, 166,185 SF General Light Industrial, 105,880 SF Manufacturing, 42,000 SF Office, and 142,350 SF fulfillment center	7,564	583	172	755	253	599	852
City of Chino Hills									
26. Woodbridge Pacific Group (Canyon Hills/Hillcrest)	Northwest of Carbon Canyon Road and west of Canyon Hills Road	38 DU single family detached	358	7	20	27	23	13	36
27. Stonefield Development	Northwest of Carbon Canyon Road and east of Fairway Drive	28 DU single-family	264	5	15	20	16	10	26
28. Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum	South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel	7-Lot Subdivision with semi-custom single-family homes, plus 3 classrooms/71 student addition to the Lutheran school	264	36	33	69	54	26	50

Table 5.17-2 Cumulative Projects Summary and Traffic Generation Forecast

Name	Location	Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
29. Coptic Orthodox Church	East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property	14,695 SF multipurpose room, 8,645 SF Sanctuary and 555 SF Bookstore	494	20	11	31	19	23	42
30. Buddhist Temple of Chino Hills	Northeast of Chino Hills Parkway and Rustic Drive	23,400 SF Buddhist temple expansion	200	7	5	12	6	6	12
31. Hidden Oaks	East of Carbon Canyon Road at Canyon Hills Road	53 DU Single Family	500	10	27	37	32	18	50
32. Greening Los Serranos Golf Course Project	15656 Yorba Avenue	124 DU single family, 532 DU multifamily	4,755	74	226	300	245	143	388
33. Paradise Ranch	East of Canyon Hills Road and south of Esquilime Drive	51 DU single-family	481	10	28	38	32	18	50
Cumulative Projects Total Trip Generation Potential			**38,572**	**1,547**	**1,459**	**3,006**	**1,792**	**1,725**	**3,517**

Source: LLG 2022a.

Year 2045 Traffic Conditions

The Year 2045 General Plan Buildout traffic forecasts for this traffic study were developed using the Orange County Traffic Analysis Model (OCTAM) 5.0 Year 2045 traffic model. Specific model assumptions are described in the Traffic Study in Appendix N. It should be noted that the OCTAM model includes future development entitlements allowed for the project site under the existing General Plan designations. However, to provide a conservative assessment, Year 2045 traffic conditions exclude these entitlements, resulting in the proposed project being compared to a vacant site as it now currently exists.

Year 2035 and Year 2045 Traffic Volumes

Year 2035 Traffic Volumes

Year 2035 cumulative traffic volumes include existing traffic plus ambient growth plus related projects as described above. Figures 6-4 and 6-5 of the Traffic Study (Appendix N) present, respectively, the AM and PM peak hour cumulative traffic volumes without project at the 22 key study intersections for the Year 2035. Figure 6-5 also presents the Year 2035 daily cumulative traffic volumes along the roadway segments without project. Figures 6-6 and 6-7 of the Traffic Study (Appendix N) illustrate the Year 2035 forecast AM and PM peak hour traffic volumes with the proposed project. Figure 6-7 also presents the Year 2035 daily Cumulative Plus Project traffic volumes along the roadway segment with project.

Year 2045 Traffic Volumes

Year 2045 cumulative traffic volumes are based on the OCTAM model. Figures 6-8 and 6-9 of the Traffic Study (Appendix N) present the Year 2045 AM and PM peak hour cumulative traffic volumes at the 22 key study intersections without project. Figure 6-9 also presents the Year 2045 daily cumulative traffic volumes along the roadway segments without project. Figures 6-10 and 6-11 of the Traffic Study (Appendix N) illustrate the Year 2045 forecast AM and PM peak hour traffic volumes with the proposed project, respectively. Figure 6-11 also presents the Year 2045 daily buildout plus project traffic volumes along the roadway segments with project.

Planned Improvements

The following improvements are part of the SR-57 Lambert Interchange improvement project, now under construction, and have been included in the Year 2035 and Year 2045 background traffic conditions:

- **SR-57 SB Ramps at Lambert Road (#2).** Widen the off-ramp to provide a second exclusive southbound left-turn lane. Restripe the shared southbound left-turn/through/right-turn lane to a second exclusive right-turn lane. Widen to provide a second exclusive eastbound right-turn lane. Modify the existing traffic signal.

- **SR-57 NB Ramps at Lambert Road (#3).** Construct a loop on-ramp on the south leg. Remove dual eastbound exclusive left-turn lanes. Widen and restripe to provide a shared eastbound through/right-turn lane and an exclusive eastbound right-turn lane. Reconstruct the existing on-ramp for a free westbound right-turn lane. Modify the existing traffic signal.

5.17.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement

Impact 5.17-1: 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]

General Plan

The City's transportation network includes roadways and pedestrian, bicycle, and public transit facilities to allow for the movement of persons and goods in the City. The policies of the City of Brea General Plan Circulation Element that are applicable to the proposed project are:

- **Policy CD-10.1.** Work continually with Caltrans to improve access to and from State Route 57.

- **Policy CD-10.3.** Cooperate with surrounding jurisdictions to ensure the efficient operation of the arterial network system.

- **Policy CD-10.4.** Work with Caltrans, the Orange County Transportation Authority, and surrounding jurisdictions to provide adequate capacity on regional routes for through traffic and to minimize cut-through traffic on the local street system.

- **Policy CD-10.6.** Recognize that Carbon Canyon Road will continue to serve high volumes of regional traffic despite its designation as a Modified Commuter. Thus, examine design solution alternatives that can improve the safety and efficiency of Carbon Canyon Road.

- **Policy CD-11.2.** Establish Level of Service goals for designated City streets, and ensure that new development maintains these service levels.

- **Policy CD-11.3.** Plan neighborhood streets, pedestrian walks, and bicycle paths as a system of fully connected routes throughout the City.

- **Policy CD-13.4.** Require new developments to provide for the use of alternative modes of transit via internal trails or travel ways—public or private—for pedestrians and vehicles other than cars. New developments shall include such features as well-designed sidewalks and parkways, bike lanes and paths, and dedicated bus turn-outs.

Pedestrian circulation would be provided via the existing and proposed sidewalk system. It should be noted that the existing public sidewalk currently terminates on Lambert Road at the western boundary of the project site and on Carbon Canyon Road at the northeastern boundary of the project site. The proposed project would construct sidewalks along the frontage on Lambert Road, Carbon Canyon Road, and Rose Drive. The existing sidewalk system in the project vicinity provides direct connectivity to the existing development along major thoroughfares. Pedestrian access to the project site would be provided via the proposed project driveways. The proposed project is required to implement PPP T-1 through T6, so that roadway system in the vicinity of the project site operate effectively with adequate capacity.

Existing pedestrian facilities within the project area are adequate. Sidewalks are generally provided throughout the city, with crosswalks at most major intersections. In close proximity to the site, Valencia Avenue, Lambert Road, and Imperial Highway provide pedestrians connectivity via the existing sidewalks, linking the project site to the surrounding community. Figure 3-6, *Non-vehicular Circulation Plan,* identifies the existing trails/sidewalks adjacent to the project site and the proposed trails within the project site as presented in the Brea 265 Specific Plan.

In addition to the trail and pedestrian connectivity proposed by the Specific Plan, a planned bikeway system would facilitate continuous bicycle access throughout the project site, linking the project site to the current bicycle facilities in the immediate area. The proposed project would provide on-street bike lane on both sides of Lambert Road, Valencia Avenue, and Rose Drive, and on the south side of Carbon Canyon Road.

The proposed project's consistency with the City's General Plan goals and policies are discussed in Table 5.11-2, Consistency with General Plan Goals and Policies. Therefore, the proposed project would comply with the policies of the General Plan's Circulation Element and impacts would be less than significant.

SCAG Connect SoCal Consistency

The proposed project's consistency with the 2020 SCAG RTP/SCS, *Connect SoCal*, is detailed in Table 5.11-3, *SCAG's Connect SoCal Consistency Analysis,* of Section 5.11, *Land Use and Planning.* The goals of Connect SoCal are related to housing, transportation, technologies, equity, and resilience. As mentioned in Section 5.11, *Land Use and Planning,* the proposed project would result in a walkable community within walking distance to commercial, office, education, and recreational opportunities, and is therefore consistent with *Connect SoCal*. Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.17-2: The proposed project would not conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). [Threshold T-2]

CEQA Guidelines Section 15064.3 (b) has the following criteria for analyzing transportation impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The City of Brea adopted significance thresholds and methodology to comply with SB 743 on October 6, 2020. The City's VMT thresholds are described in Section 5.17.4.1 under "VMT Thresholds." The proposed project does not meet any of the screening criteria and further VMT was prepared. However, it should be noted that the 13-acre sports park component of the proposed project does screen out of further VMT analysis under the "Project Type Screening" as it falls under the "local park" category, thus, the sports park is assumed to have no significant impact on transportation. This component was excluded in the model input for the VMT analysis.

A full VMT analysis utilizing OCTAM was prepared and is included in Appendix O to this DEIR. The OCTAM was developed, validated and adopted by OCTA. According to OCTAM, the project site is located in Traffic Analysis Zones (TAZ) 43, 52, and 53. Figure 4 of the VMT Analysis (Appendix O to the DEIR) shows the TAZ Map from OCTAM. As shown in Table 5.17-3, *Project-Generated VMT per Service Population,* the baseline project-generated VMT per service population is 26.1 (TAZ 43), 20.0 (TAZ 52), and 28.4 (TAZ 53), which is 13.11 percent (TAZ 42), 33.62 percent (TAZ 52), and 5.37 percent (TAZ 53) below the City of Brea General Plan Buildout per service population threshold of 30.1. And the cumulative project-generated VMT per service population is 26.6 (TAZ 43), 18.1 (TAZ 52), and 28.7 (TAZ 53), which is 11.33 percent (TAZ 42), 39.77 percent (TAZ 52), and 4.49 percent (TAZ 53) below the City average General Plan Buildout VMT per service population threshold of 30.1. Therefore, the proposed project would not exceed the City of Brea General Plan Buildout VMT per service population and therefore would not have a significant impact.

Table 5.17-3 Project-Generated VMT per Service Population

Baseline Project-Generated VMT Per Service Population			
Description	**Project**	**City of Brea General Plan Buildout**	**Compared to Threshold (City of Brea)**
TAZ 43	26.1	30.1	13.11% Lower
TAZ 52	20.0	30.1	33.62% Lower
TAZ 53	28.4	30.1	5.37% Lower
Cumulative Project-Generated VMT Per Service Population			
Description	**Project**	**City of Brea General Plan Buildout**	**Compared to Threshold (City of Brea)**
TAZ 43	26.6	30.1	11.33% Lower
TAZ 52	18.1	30.1	39.77% Lower
TAZ 53	28.7	30.1	4.49% Lower

Source: LLG 2022b.

It should be noted that the VMT per service population for TAZs 43, 52, and 53 in the base model (without the addition of the project) are below the average city VMT per population, and the project VMT per service population characteristics are similar to the base model TAZs. Because the VMT is analyzed per service population per the City's TIA Guidelines and not total VMT, the driving per day for service population with the addition of the proposed project is nominal.

As shown in Table 5.17-4, *Link-Level Boundary Citywide VMT per Service Population,* the proposed project baseline link-level Citywide VMT per Service Population is 6.36 percent below the "No Project" condition link-level Citywide VMT per Service Population threshold, and cumulative link-level Citywide boundary VMT

per Service Population is 5.36 percent below the "No Project" condition link-level Citywide VMT per Service Population threshold. Therefore, the proposed project link-level VMT per Service Population will not increase under the "Plus Project" condition when compared to the "No Project" condition and therefore the proposed project's effect on VMT will be less than significant.

Table 5.17-4 Link-Level Boundary Citywide VMT per Service Population

Description	No Project Scenario	Plus Project Scenario	Compared to Thresholds (No Project Scenario)
Baseline	15.42	14.44	6.36 % Lower
Cumulative	14.55	13.77	5.36% Lower

Source: LLG 2022b.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.17-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Threshold T-3]

Intersection Vehicle Queuing Evaluation

The traffic study includes a queuing evaluation for the two SR-57 ramps on Lambert Road and the seven study intersections along Imperial Highway to assess if the stacking requirements within the proposed project are adequate. The queuing evaluation includes the following intersections:

- #2 – SR-57 SB Ramps at Lambert Road (Brea/Caltrans)
- #3 – SR-57 NB Ramps at Lambert Road (Brea/Caltrans)
- #16 – SR-57 SB Ramps at Imperial Highway (Brea/Caltrans)
- #17 – SR-57 NB Ramps at Imperial Highway (Brea/Caltrans)
- #18 – Associated Road at Imperial Highway (Brea/Caltrans)
- #19 – Castlegate Lane/Placentia Avenue at Imperial Highway (Brea/Caltrans)
- #20 – Kraemer Boulevard at Imperial Highway (Brea Caltrans)
- #21 – Valencia Avenue at Imperial Highway (Brea/Caltrans)
- #22 – Rose Drive at Imperial Highway (Placentia/Caltrans)

The queuing evaluation was conducted for Year 2035 cumulative and Year 2045 buildout traffic conditions based on the Average Queue methodology, which calculates the average queue value in terms of number of vehicles per lane. The queuing analysis determined the following.

Year 2035 Cumulative Traffic Conditions

Table 9-1, Year 2035 Peak Hour Intersection Queuing Analysis, of the Traffic Study (Appendix N) presents the AM and PM peak hour queueing analyses results for the nine study intersections for Year 2035. The first column of Table 9-1 presents the resultant queues for Year 2035 cumulative traffic conditions. The second column presents the resultant queues for Year 2035 cumulative traffic conditions with the addition of Project traffic. The third column presents the resultant queues with the inclusion of recommended traffic improvements, where needed.

Year 2035 Without Project

As shown in Table 9-1, two of the nine study intersections would have queues which exceed the provided storage capacity for one or more intersection approach without addition of project-related traffic. The remaining study intersections have queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies are:

- #18: Associated Road at Imperial Highway
  - Eastbound Left-Turn: PM Peak Hour
  - Westbound Left-Turn: PM Peak Hour
- #22: Rose Drive at Imperial Highway
  - Southbound Left-Turn: AM Peak Hour and PM Peak Hour
  - Westbound Right-Turn: PM Peak Hour

Year 2035 With Project

As shown in Table 9-1 of the Traffic Study (Appendix N), the same two study intersections (#18 and #22) under the Year 2035 without project conditions would have queues that exceed the provided storage capacity for one or more intersection approaches without addition of project-related traffic.

The addition of project traffic would not contribute to the eastbound left-turn movement at the intersection of Associated Road at Imperial Highway (#18). Also, the addition of project traffic would add less than one vehicle to the westbound left-turn queue, which is considered a nominal impact. Therefore, project-related improvements at the intersection of Associated Road at Imperial Highway (#18) are not required to improve the queues.

The addition of project traffic would contribute to two approaches—southbound left-turn during AM and PM peak hours and westbound right-turn during PM peak hour—at the intersection of Rose Drive at Imperial Highway intersection (#22), which would already have queues that exceed the provided storage capacity without the proposed project. However, the following improvements would be provided as required by PPP T-5, and after implementation of the recommended improvements, the southbound left-turn and westbound right-turn queues would operate better than preproject conditions.

- **#22, Rose Drive at Imperial Highway:** Restripe the second southbound through lane as a shared southbound left/through lane. Modify the existing traffic signal and provide northbound and

southbound split phasing and westbound right-turn overlap phasing. Remove crosswalk on the east leg. This improvement will require design concurrence from Caltrans, and construction will occur under standard Caltrans permitting process. (PPP T-5)

It should be noted that the SR-57 Ramps at Lambert Road (#2 and #3) include planned improvements as part of the Year 2035 background traffic conditions.

Year 2045 Buildout Traffic Conditions

Year 2045 Buildout Without Project

Table 9-2, Year 2045 Peak Hour Intersection Queuing Analysis, of the Traffic Study (Appendix N) presents the AM and PM peak hour queueing analyses results for the nine study intersections for Year 2045. As shown, without the proposed project, three of the nine study intersections would have queues that exceed the provided storage capacity for one or more intersection approach. The remaining study intersections have queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies without the proposed project are:

- **Intersection No. 18:** Associated Road at Imperial Highway
  - Eastbound Left-Turn: PM Peak Hour
  - Westbound Left-Turn: PM Peak Hour
- **Intersection No. 19:** Castlegate Lane/Placentia Avenue at Imperial Highway
  - Westbound Left-Turn: PM Peak Hour
- **Intersection No. 22:** Rose Drive at Imperial Highway
  - Southbound Left-Turn: AM Peak Hour and PM Peak Hour
  - Westbound Right-Turn: PM Peak Hour

Year 2045 Buildout With Project

As shown in Table 9-2 of the Traffic Study (Appendix N), with the addition of proposed project traffic to Year 2045 buildout traffic conditions, one additional intersection would have a deficient queuing condition compared to the without project conditions. Therefore, four of the nine study intersections have queues that exceed the provided storage capacity for one or more intersection approach. The remaining study intersections have queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies are:

- **Intersection No. 2:** SR-57 SB Ramps at Lambert Road
  - Westbound Left-Turn: AM Peak Hour
- **Intersection No. 18:** Associated Road at Imperial Highway
  - Eastbound Left-Turn: PM Peak Hour
  - Westbound Left-Turn: PM Peak Hour

- **Intersection No. 19:** Castlegate Lane/Placentia Avenue at Imperial Highway
  - Westbound Left-Turn: PM Peak Hour

- **Intersection No. 22:** Rose Drive at Imperial Highway
  - Southbound Left-Turn: AM Peak Hour and PM Peak Hour
  - Westbound Right-Turn: PM Peak Hour

The addition of project traffic would add less than one vehicle to the westbound left-turn queue at the intersection of SR-57 SB Ramps at Lambert Road (#2); therefore, impacts would be considered less than significant. No project-related improvements at the intersection are required to improve the queues.

The addition of project traffic would not contribute to the eastbound left-turn movement at the intersection of Associated Road at Imperial Highway (#18). Also, the addition of project traffic would add less than one vehicle to the westbound left-turn queue, which is considered nominal. Therefore, project-related improvements at the intersection of Associated Road at Imperial Highway (#18) are not required to improve the queues.

The addition of project traffic would add less than one vehicle to the westbound left-turn queue at the intersection of Castlegate Lane/Placentia Avenue at Imperial Highway (#19), which is considered nominal. Therefore, project-related improvements at the intersection are not required to improve the queues.

As shown in Table 9-2 of the Traffic Study (Appendix N), implementation of recommended improvements at the intersection of Rose Drive at Imperial Highway (#22) as outlined in PPP T-5 (same as under the 2035 cumulative traffic conditions) would improve queues for the southbound left-turn and westbound right-turn lanes. After implementation of the recommended improvements, the southbound left-turn and westbound right-turn queues operate better than without project conditions.

Gate Queuing Analysis

The proposed project includes gated entries at Driveway B and Driveway C. Therefore, a gate queueing assessment has been prepared to identify the minimum distance the gate should be placed from the intersection to ensure that the queues do not affect the signal operations along Valencia Avenue and Rose Drive. For the purposes of this analysis, it was assumed that residents of Brea 265 would enter using an electronic gate opener/transponder, similar to that used to access garages, and exit via a vehicle-actuated loop process or similar type technology. And it was also assumed that visitors would use a phone-actuated process (call box) to enter.

The analysis determined that the gated entries at Valencia Avenue at Driveway B and Rose Drive at Driveway C would require a storage reservoir length of 20 feet and 40 feet, respectively, between the front of the gate to the proposed project's right-of-way/property line to satisfy both the AM and PM peak hour traffic. And the gated exits at Valencia Avenue at Driveway B and Rose Drive at Driveway C would require a storage reservoir length of 36 feet and 59 feet, respectively, between the front of the gate to the crosswalk in order for the outbound vehicles to not queue past the gate. Implementation of PPP T-6 would set back the gated entry for Driveway B to provide a minimum storage reservoir length of 40 feet between the front of

the gate to the project site's property line on Valencia Avenue and set back the gated entry for Driveway C to provide a minimum storage reservoir length of 60 feet between the front of the gate to the project site's property line on Rose Drive. Therefore, adequate entry and exit stacking length would be provided, and gate queuing impacts would be less than significant.

Site Access

Table 10-1 and Table 10-2 of the Traffic Study (Appendix N) indicate that Rose Drive at Vesuvius Drive/Driveway D (#15) and Rose Drive and Driveway C would operate at acceptable levels with the implementation of the following driveway improvements required by PPP T-5. Therefore, site access impacts would be less than significant.

- **No. 15, Rose Drive at Vesuvius Drive/Driveway D:** Restripe the southbound exclusive right-turn as a shared southbound through/right-turn lane. Widen to provide a second southbound departure lane. Modify the existing traffic signal.

Internal Circulation Evaluation

The traffic study evaluated the onsite circulation for vehicle-pedestrian conflicts, and it was determined that the overall layout does not create any unsafe vehicle-pedestrian conflict points and that driveway throating is sufficient such that access to parking spaces is not impacted by internal vehicle queuing/stacking. The Traffic Study determined that the proposed project would provide very good internal circulation and adequate alignment, spacing, and throating of the project driveways. Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.17-4: The proposed project would not result in inadequate emergency access. [Threshold T-4]

The project site fronts Lambert Road and Valencia Avenue, providing at least two access points in and out of these streets to provide emergency access. The nearest fire station to the project area is Fire Station #3 at 2600 E. Santa Fe Road, approximately 0.4 mile to the west; Fire Station #4 at 198 N Olinda Place, approximately 2 miles east of the project site, is also anticipated to serve the project site. The existing average response time for Brea Fire ranges from 4 minutes 47 seconds to 5 minutes 4 seconds, and the City's goal is to respond within 4 minutes for the first fire apparatus to arrive on scene, and 8 minutes for a multiunit response team to arrive on scene.

The surrounding roadways would continue to offer emergency access to the project site and surrounding properties during and after construction. Moreover, the proposed project would not result in emergency access, and impacts to adopted emergency response and evacuation plans are less than significant. During the development review and permitting process, Brea Fire Department would review and approve a fire master plan(s) for each planning area to ensure that emergency access, water, and accessibility to each residential building and lot are provided to serve the needs of the fire department. The required building plan check for site plan and emergency access would ensure that the proposed project incorporates appropriate fire safety

features to reduce project impacts. All internal streets serving the proposed project would be designed and improved to meet emergency vehicle turning radii. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

5.17.5 Cumulative Impacts

The Traffic Study evaluated cumulative traffic impacts from related projects in the cities of Brea, Fullerton, and Chino Hills as described in Section 5.17.4.1 under "Future Traffic Conditions" and determined that the proposed project, when combined with other related projects, would not result in queuing impacts or other circulation impacts provided that recommended improvements are provided as required project design features. The proposed project would be consistent with adopted policies, plans, and programs regarding circulation, including public transit, bicycle, and pedestrian facilities. As discussed in Impact 5.17-2, the cumulative project-generated VMT per service population with the project would be below the City average General Plan Buildout VMT per service population threshold; therefore, cumulative VMT impacts would be less than significant. Furthermore, the City of Brea TIA Guidelines (September 2020) indicates that if a project is consistent with the RTP/SCS, then the cumulative impacts shall be considered less than significant. The proposed project is consistent with the RTP/SCS (see Table 5.11-3, *SCAG's Connect SoCal Consistency Analysis*), and the cumulative impacts are considered less than significant. Site access is adequately designed and would not combine with other area traffic impacts to result in a significant cumulative impact on area circulation systems or create hazardous conditions. The proposed project would not result in cumulative transportation impacts.

5.17.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.17-1 through 5.17-4.

5.17.7 Mitigation Measures

No mitigation measures are required.

5.17.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.17.9 References

Institute of Transportation Engineers. 2021. Trip Generation Manual. 11th edition.

Linscott, Law, & Greenspan (LLG). 2022a, February 8. Traffic Circulation Analysis, Brea 265 Specific Plan. DEIR Appendix N.

———. 2022b, February 22. Vehicles Miles Traveled (VMT) Analysis for the Brea 265 Specific Plan. DEIR Appendix O.

5. Environmental Analysis
TRANSPORTATION

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5.18 TRIBAL CULTURAL RESOURCES

The analysis in this section is based in part on the following information:

- *Paleontological and Cultural Resources Assessment for the Brea 265 Specific Plan*, City of Brea, Orange County, California, Cogstone, March 2019

A complete copy of this study is in the technical appendices of this Draft EIR (Appendix E).

5.18.1 Environmental Setting

5.18.1.1 REGULATORY BACKGROUND

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (United States Code, Title 16, Sections 470aa–mm) became law on October 31, 1979, and has been amended four times. It regulates the protection of archaeological resources and sites that are on federal and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (United States Code, Title 25, Sections 3001 et seq.) 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.

State Regulations

California 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 a nonrenewable resource and therefore receive protection under the California PRC and CEQA.

PRC Sections 5097.9 to 5097.991 provides protection to Native American historical and cultural resources and sacred sites and identifies the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification of descendants about discoveries of Native American human remains, and provides for treatment and disposition of human remains and associated grave goods.

California Health and Safety Code

California Health and Safety Code Section 7050.5 requires that if human remains are discovered in the project site, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into 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 for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority

and has reason to believe the human remains are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC.

California Register of Historical Resources

The California Register of Historic Resources (CRHR) is the state version of the National Register of Historic Resources program (see also Section 5.5, *Cultural Resources*). It was enacted in 1992 and became official January 1, 1993. CRHR was established to serve as an authoritative guide to the state's significant historical and archaeological resources. Resources that may be eligible for listing include buildings, sites, structures, objects, and historic districts. According to subsection (c) of PRC Section 5024.1, a resource may be listed as a historical resource in the CRHR if it meets any of the four National Register criteria.

California Senate Bill 18

Existing law provides 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.

Senate Bill 18 was signed into law in September 2004 and went into effect on March 1, 2005. It places new requirements upon local governments for developments within or near "traditional tribal cultural places" (TTCP). Per SB 18, the law 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 recommend that the NAHC provide written information as soon as possible but no later than 30 days after receiving a request 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 a local government if they want to consult 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, they would be included in the project's EIR. If both the City of Brea and the tribe agree that adequate mitigation or preservation measures cannot be taken, neither party is obligated to take action.

SB 18 is triggered before the adoption, revision, amendment, or update of a city's or county's general plan. Although 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 requiring 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 also

amended Civil Code Section 815.3 and adds California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

Assembly Bill 52

AB 52 took effect July 1, 2015, and requires inclusion of a new section in CEQA documents titled Tribal Cultural Resources, which include heritage sites. Under AB 52, a tribal cultural resource (TCR) is defined similar to tribal cultural places under SB 18—sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources. Or the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a tribal cultural resource.

Similar to SB 18, AB 52 requires consultation with tribes at an early stage to determine whether the project would have an adverse impact on TCRs and define mitigation to protect them. Per AB 52, 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. The tribe then has 30 days after receiving the notification to respond if it wishes to engage in consultation. The lead agency must initiate consultation within 30 days of receiving the request from the tribe. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a tribal cultural resource, or, after a reasonable effort in good faith, a party decides that mutual agreement cannot be reached. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on tribal cultural resources and discuss feasible alternatives or mitigation that avoid or lessen the impact.

Local Regulations

There are no local regulations pertaining to tribal cultural resources.

5.18.1.2 EXISTING CONDITIONS

The project site is within the traditional tribal territory of the Gabrielino (Tongva). Much of the southern California archaeological literature asserts that the Gabrielino moved into southern California from the Great Basin around 4,000 years ago, wedging themselves between the Hokan-speaking Chumash to the north, and the Yuman-speaking Kumeyaay to the south. This theory is counter to the Gabrielino community's knowledge about their history and origins. Oral tradition states that the Gabrielino have always lived in their traditional territory, with their emergence into this world occurring at Puvungna in Long Beach. The Tongva territory stretched from Topanga Canyon in the northwest to the base of Mount Wilson in the north to San Bernardino in the east, Aliso Creek in the southeast, and the four southern Channel Islands—an area of more than 2,500 square miles.

5.18.2 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:

TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

5.18.3 Plans, Programs, and Policies

Regulatory Requirement

PPP CUL-2 All construction activities will be conducted in accordance with Section 7050.5 of the California Health and Safety Code regarding the potential discovery of human remains. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has been contacted. If applicable, the Native American Heritage Commission will be responsible for designating the most likely descendant (MLD), as required by Section 5097.98 of the California Public Resources Code. If the landowner rejects the recommendations of the MLD, the burial location would be determined in compliance with California Public Resources Code, Section 5097.98.

5.18.4 Environmental Impacts

5.18.4.1 METHODOLOGY

Conducting consultation early in the CEQA process allows tribal governments, public lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to TRC, and reduce the potential for delay and conflict in the environmental review process. The intent of the consultations is to provide an opportunity for interested Native American contacts to work with the City during the project planning process to identify and protect TCRs.

A sacred lands file (SLF) search conducted by the NAHC for the project site did not identify any sacred lands. The NAHC identified 17 local Native American representatives as potentially having local knowledge:

SB 18 Consultation

In accordance with SB 18 requirements, the NAHC provided a list of tribal representatives who may have knowledge of TRCs in the project area. The City sent invitation letters to these representatives on March 13, 2019, formally inviting tribes to consult with the City on the proposed project. Letters were sent to the following 17 tribes:

- Gabrielino-Tongva Tribe
- Gabrielino Tongva Indians of California Tribal Council
- Jamul Indian Village
- Ewiiaapaayp Tribe
- Gabrielino /Tongva Nation
- Campo Band of Mission Indians
- Juaneño Band of Mission Indians
- San Pasqual Band of Mission Indians
- Sycuan Band of the Kumeyaay Nation
- La Posta Band of Mission Indians
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- La Posta Band of Mission Indians
- Ewiiaapaayp Tribe
- Juaneño Band of Mission Indians Acjachemen Nation
- Gabrieleno Band of Mission Indians - Kizh Nation
- Manzanita Band of Kumeyaay Nation
- Viejas Band of Kumeyaay Indians

Response letters were received from one tribal representative—Andrew Salas of Gabrieleño Band of Mission Indians–Kizh Nation—requesting consultation, and the consultation per SB 18 took place on June 13, 2019.

AB 52 Consultation

AB 52 requires meaningful consultation with California Native American tribes on potential impacts to TCRs, as defined in PRC Section 21074. TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either eligible or listed in the CRHR or local register of historical resources. As part of the AB 52 process, Native American tribes must submit a written request to the lead agency to be notified of projects within their traditionally and culturally affiliated area. Pursuant to the AB 52 consultation requirement, Andrew Salas of Gabrieleno Band of Mission Indians–Kizh Nation, requested consultation in writing. Subsequently, on June 13, 2019, the City conducted a consultation with the Gabrieleno Band of Mission Indians–Kizh Nation in compliance with AB 52.

5.18.4.2 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.18-1: The proposed project would not 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). [Threshold TCR-1.i]

The project site has been continuously used for oil production and to a lesser degree for agriculture since the 1880s. Review of existing historical documents, maps, and literature and the results of the intensive pedestrian survey indicate that Areas A and B of the project site—as shown on Figure 5.5-1, *Cultural Resources Survey Area*—represent an extension of the previously recorded historic district, the Brea-Olinda Oil Field District (P-30-177012). Area C of the project site has been used for agricultural uses, including Peltzer Christmas Tree Farm and Mannaserro Strawberry Farm. The project site contains five previously recorded archaeological and historical resources and three newly identified archaeological resources (Cogstone 2019). However, these resources are not eligible or listed in the CRHR or local register of historical resources (Public Resources Code Section 21074) (Cogstone 2019). Implementation of the proposed project would not result in any substantial adverse change in a TCR defined pursuant to PRC 5024.1 or PRC 5020.1(k). Impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.18-2: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code section 5024.1(c). [Threshold TCR-1.ii]

In considering the significance of the resource to a California Native American tribe, the City contacted the NAHC for the listing of tribes with traditional lands or cultural places located within the boundaries of the project site and to search the SLF. The SLF search result was negative.

AB 52 requires meaningful consultation between lead agencies and California Native American tribes on potential impacts to TCRs, as defined in PRC Section 21074. A TCR is a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe that is either on or eligible for inclusion in the California Historic Register or a local historic register, or is a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC Section 21074[a][1–2]). TCRs may be found throughout Orange County, but information about them is much more difficult to obtain than for most archaeological resources. Currently, there is no database of such resources, and most cannot be identified by surveying the land. Identification of TCRs requires coordination with Native American tribes, and their precise location is often difficult to determine because they are often only documented through the oral history of the tribe.

There are no known TCRs within the boundaries of the project site that are determined by the City of Brea to be significant pursuant to criteria in PRC Section 5024.1(c). Although there is no known or identified TCRs within the project site, the Gabrieleño Band of Mission Indians–Kizh Nation considers the project site to be within its ancestral tribal territory, descending from a higher degree of kinship than traditional or cultural affiliation, and the Gabrieleño Band of Mission Indians–Kizh Nation requested the presence of a tribal cultural monitor on-site during ground-disturbing activities.

Ground-disturbing activities, such as excavation and grading, may encounter undisturbed native soils, and it is possible that subsurface TCRs could be discovered. The disturbance of these could cause a substantial adverse change in the significance of the resource(s) if not mitigated. Therefore, impacts to TCRs are considered potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

5.18.5 Cumulative Impacts

Cumulative impacts to TCRs would occur when the impacts of the proposed project, in conjunction with other projects and development in the city, result in multiple and/or cumulative impacts to TCRs in the area. The Gabrieleno Band of Mission Indians–Kizh Nation, the ancestral tribal group, did not identify any recorded TCR on or near the project site. The potential for uncovering significant TCRs on the project site and in the vicinity of the project site is low, but additional mitigation measure has been provided to reduce the potential impacts of discovery, so it is unlikely that the proposed project, in conjunction with other development projects in the city, would result in cumulatively significant TCR impacts.

5.18.6 Level of Significance Before Mitigation

The following impact would be less than significant: 5.18-1.

Without mitigation, the following impacts would be **potentially significant:**

- **Impact 5.18-2** Tribal cultural resources could be adversely impacted by grading activities associated with the proposed project.

5.18.7 Mitigation Measures

Impact 5.18-2

TCR-1 Prior to the commencement of any ground disturbing activity at the project site, the project applicant shall retain a Native American Monitor approved by the Gabrieleno Band of Mission Indians-Kizh Nation—the tribe that consulted on this project pursuant to Assembly Bill 52 (the "Tribe" or the "Consulting Tribe")—and in concurrence with the City of Brea as the CEQA lead agency. A copy of the executed contract shall be submitted to the City of Brea Planning and Building Department prior to the issuance of any permit necessary to commence a ground-disturbing activity.

- The Tribal monitor shall only be present on-site during the construction phases that involve ground-disturbing activities. Ground disturbing activities are defined by the Tribe as activities that may include, but are not limited to, pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area.

- The Tribal Monitor shall complete daily monitoring logs that provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified.

The on-site monitoring shall be concluded when all ground-disturbing activities on the project site are completed, or when the Tribal Representatives and Tribal Monitor have indicated that all upcoming ground-disturbing activities at the project site have little to no potential for impacting Tribal Cultural Resources.

TCR-2 If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project. The following procedures will be carried out for treatment and disposition of the discoveries:

- Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 100 feet) until the find can be assessed.
- All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist and Tribal monitor approved by the Consulting Tribe. If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes.
- If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).
- Work may continue on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources.

Preservation in place (i.e., avoidance) is the preferred manner of treatment. 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, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees

to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

5.18.8 Level of Significance After Mitigation

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

5.18.9 References

Cogstone. 2019, March. Paleontological and Cultural Resources Assessment for the Brea 265 Specific Plan, City of Brea, Orange County, California. DEIR Appendix E.

National Park Service (NPS). 2021, December 20 (accessed). National Register of Historic Places, NPGallery Digital Asset Search: Brea, Orange County, California. https://npgallery.nps.gov/NRHP.

Office of Historic Preservation (OHP) 2021, December 20 (accessed). Listed California Historical Resources, Orange County. http://ohp.parks.ca.gov/ListedResources/?view=county&criteria=30.

5. Environmental Analysis
TRIBAL CULTURAL RESOURCES

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5.19 UTILITIES AND SERVICE SYSTEMS

The analysis in this section is based in part on the following technical reports:

- *Draft Brea 265 Water System Analysis,* Psomas, March 3, 2022. (Appendix P)
- *Brea 265 Water Supply Assessment*, Psomas, March 2022. (Appendix Q)
- *Technical Memorandum, Brea 265 Sewer System Analysis*, Psomas, March 3, 2022 (Appendix R)

Complete copies of these studies are included in Appendices P, Q, and R of this Draft EIR.

5.19.1 Environmental Setting

5.19.1.1 REGULATORY BACKGROUND

Water

The Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, secs. 10610 et seq.) was enacted in 1983 and applies to municipal water suppliers that serve more than 3,000 customers or supply more than 3,000 acre-feet per year (afy) of water. The Urban Water Management Planning Act requires these suppliers to prepare and update their urban water management plans (UWMP) every five years to demonstrate an appropriate level of reliability in supplying anticipated short-term and long-term water demands during normal, dry, and multiple-dry years. The Urban Water Management Planning Act specifies the data necessary to document the existing and projected future water demand over 20 years and requires that the projected demands be presented in 5-year increments for the 20-year projection.

The City of Brea adopted the 2015 Urban Water Management Plan in April 2016. The UWMP evaluates City-wide water supply and demand reliability for 25 years into the future and is a baseline document for the preparation of water supply assessments. Brea's 2015 UWMP concluded there was an adequate and reliable supply of water to provide for existing demand and estimated growth through year 2040, based on information then available.

California Green Building Standards

California Green Building Standards Code (CALGreen), Chapter 5, Division 5.3, Water Efficiency and Conservation, establishes provisions to conserve water used indoors, outdoors, and in wastewater conveyance in nonresidential development. The intent is to encourage voluntary reduction of potable water use in new or altered buildings by making building owners and/or tenants aware of their daily potable water consumption. When the meters are installed, the building operator would have the ability to establish a water consumption baseline to monitor future water use.

CALGreen Chapter 4, Division 4.3, Water Efficiency and Conservation, establishes provisions to conserve water used indoors (e.g., water closets, urinals, showerheads, and faucets), outdoors such as landscape areas, and in water reuse systems in residential development.

Local

In July 1995, the Brea City Council adopted Ordinance 967, establishing water impact fees for certain new development projects in Brea and the annexed portions of its sphere of influence. In March 2003, the Brea City Council adopted an updated water master plan, and water impact fees were modified according to the updated plan. These fees are necessary to ensure that adequate water infrastructure and facilities are provided to new development projects. The amount of fee per dwelling unit varies by a project's geographical location and elevation.

All new development projects are subject to the Water Impact Fees, except:

- Alterations to an existing building.
- Reconstruction (within two years), when a building has been destroyed by fire, wind, earthquakes, vandalism, or other natural or man-made disasters.
- Additions to a single-family or multiple-family residence and construction of public schools.

Therefore, the proposed project is subject to the water impact fees prior to the issuance of any building permits. In some cases, a developer may be required to make certain water improvements in addition to or in lieu of paying water impact fees. In such a case, however, the total cost of water improvements and/or fees will not exceed the development's fair share of providing the water infrastructure or facilities.

Sewer

State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer System, requires a public agency that owns or operates a sewer system to develop and implement a sewer system management plan so that the sanitary sewer infrastructure is adequately operated, maintained, repaired, and upgraded. The City of Brea adopted its Sewer Master Plan (SMP) in November 2021, replacing the City's previous 2005 Sewer Master Plan. The intent of the 2021 SMP was to update the City's sewer model, hydraulic analysis, condition assessment, and capital improvement project recommendations based on the latest available information. The sewer model geometry was updated with facilities constructed since 2005, when the model was last updated. The sewer load factors were reevaluated and refined. The sewer loads were reallocated based upon recent water use data and applied sewer return factors. Updated future planning data was utilized to estimate future sewer loads and size future sewer facilities. Existing and future capacity deficiencies were identified and improvement projects were recommended, which identified approximately $19 million in citywide sewer improvements needed over the next 10 years.

Electricity

California's Appliance Efficiency 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.

The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings whose permit applications are dated on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.

CALGreen (24 CCR Part 11) has mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG 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. The code reduces construction waste, makes buildings more efficient in the use of materials and energy, and reduces environmental impacts during and after construction. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options, allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

Solid Waste

AB 939 (Integrated Solid Waste Management Act of 1989; California Public Resources Code secs. 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.

AB 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.

AB 1826 (California Public Resources Code secs. 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.

SB 1016 (Solid Waste Disposal Measurement Act of 2008) builds on AB 939 compliance requirements by implementing a simplified measure of a jurisdiction's performance by changing to a disposal-based indicator—the per capita disposal rate—that uses 1) a jurisdiction's population (or in some cases employment) and (2) its disposal as reported by disposal facilities.

Section 5.408 of the CALGreen requires that a minimum of 65 percent of the nonhazardous construction and demolition waste from nonresidential uses be recycled and/or salvaged for reuse.

5.19.1.2 EXISTING CONDITIONS

Water

The City of Brea Water Division serves all the city's area except the Vesuvius tract at the eastern end, which is served by Yorba Linda Water District. The City receives its water from three main sources, local well water from the La Habra Basin and the Main San Gabriel Basin, which is provided by the California Domestic Water Company (CDWC), and imported water from the Municipal Water District of Orange County (MWDOC). The City's distribution system consists of 228 miles of pipeline and seven storage reservoirs with a combined storage capacity of 69.5 million gallons (mg). The storage system is supported with five booster pump stations. The booster pumps have a total capacity of 14,800 gallons per minute (gpm) serving 18 pressure zones. In 2020, the City served 13,821 municipal connections that supplied 9,131 acre-feet (af) of water. The City also manages an irrigation well at the Brea Creek Golf Course that pumps up to 450 gpm to serve the golf course.

Annual potable water use in the City's service area has averaged 9,956 af in the past decade. In fiscal year 2019-2020, the City used 9,131 af of water—9,039 af (99 percent) potable water from CDWS and 92 af (1 percent) nonpotable water pumped from La Habra Groundwater Basin for irrigation purposes (Psomas 2022a). There is currently no recycled water use in the City's service area.

The City also extracts local groundwater from the La Habra Groundwater Basin (Basin). However, the one groundwater well owned by the City is used strictly for irrigation purposes. Table 5.19-1, *Historical City Potable Water Supply (af)*, shows the City's water supply by source for the five fiscal years from 2016 through 2020. As shown, in 2020, approximately 99 percent came from CDWC, and approximately 1 percent from local groundwater.

Table 5.19-1 Historical City Potable Water Supply (af)

Source	2016	2017	2018	2019	2020
CDWC Imported	7,267	7,645	7,950	8,315	9,039
MWDOC Imported	1,553	1,160	1,889	877	0
Local Groundwater (nonpotable)	87	96	107	95	92
Total	**8,878**	**8,900**	**9,946**	**9,287**	**9,131**

Source: Psomas 2022a.
af = acre feet

The City receives water from CDWC through three metered connections. Each connection is gravity fed and comes from one of two CDWC hydraulic lift systems. The City purchases treated potable water from the Metropolitan Water District of Southern California through MWDOC. The three City supply connections with Metropolitan are OC-6, OC-29, and OC-62, with capacities of 10 cubic feet per second (cfs), 15 cfs, and 10 cfs, respectively.

Sewer

The City of Brea provides local sewage collection within the city's corporate boundaries, portions of unincorporated Orange County, and a small portion of Placentia. The gravity system consists of over 100 miles of pipe, the majority of which is vitrified clay pipe ranging from 8 to 27 inches in diameter. The service area consists of 10 major sewer drainage areas that flow into City trunk sewers, which in turn outlet to Orange County Sanitation District (OCSD) facilities. OCSD collects sewage from cities throughout Orange County and treats it at regional facilities.

The 94.5-acre western portion of the project site, west of Valencia Avenue, is tributary to the City sewer system pipelines shown on Figure 5.19-1, *City of Brea Tributary Sewer Pipelines*. The nearest sewer to the project site to the west is an 8-inch pipeline that extends through the Brea Sports Park up to the southern edge of the project boundary. This pipeline currently serves the Brea Sports Park and Thompson Energy operations. The 8-inch pipeline discharges south to the 8-inch pipeline along Birch Street and continues east approximately 1,050 feet to Flower Hill Street where the system routes through the residential neighborhood north of Birch Street. The 8-inch pipeline transitions into a 10-inch pipeline in the neighborhood at Primrose Avenue and Foxglove Street. At this location, a substantial amount of additional sewer flows enter from the Blackstone development north of Lambert Road. The 10-inch pipeline then turns south on Starflower Street, which transitions into Ranger Street (at the intersection of Birch Street), and continues south in Ranger Street to a 15-inch pipeline along north side of the Loftus Diversion Channel. The 15-inch pipeline along the channel also serves the industrial area north of the channel and flows west to Kraemer Boulevard. Just upstream of Kraemer, the 15-inch pipeline transitions to a short reach of 12-imch pipeline with a steep slope, then the sewer flows south in a 15-inch pipeline in Kraemer to OCSD's trunk sewer at Imperial Highway.

The 167.6-acre eastern portion of the project site falls within Region 9 of the City of Brea SMP. The 33-inch OCSD Carbon Canyon Interceptor runs through the eastern portion of the project site. The former OCSD Carbon Canyon Lift Station and its associated force main were eliminated with the construction of this gravity main system. In exchange for allowing a right-of-way through the property, OCSD agreed to allow the future development on the eastern portion of the project site to discharge to the Carbon Canyon Interceptor and include stub-outs for future sewer connections at their manholes within the project site.

Orange County Sanitation District Sewer System

OCSD provides wastewater collection, treatment, and disposal services for approximately 2.5 million people in central and northwest Orange County, including in the City of Brea. The project site has an OCSD easement containing the Carbon Canyon Dam interceptor sewer, and sewage generated from the western portion of the project site would ultimately discharge to the OCSD facility at Imperial Highway.

Sewer flows from the project site would be treated by OCSD Plant No. 1 at 10844 Ellis Avenue in Fountain Valley, about four miles northeast of the ocean, and Plant No. 2 at 22212 Brookhurst Street in Huntington Beach. Plant No. 1 receives wastewater from six major trunk sewer pipes and provides advanced primary and secondary treatment. The combined maximum secondary treatment capacity of both Plant No. 1 and Plant No. 2 is 332 million gallons per day (mgd), and they currently operate with an average daily intake of 185 mgd—

120 mgd at Plant No. 1 and 65 mgd at Plant No.2 (OCSD 2019). There are no plans for expansion of the treatment capacity of either plant.

OCSD supplies the Orange County Water District with 130 million gallons a day of treated wastewater that is reclaimed and reused for treatment processes and landscaping, injected into the seawater intrusion barrier to protect groundwater, and used for the Groundwater Replenishment System.

Electricity

The project site is in Southern California Edison's (SCE) service area, which 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 2015b). Total electricity consumption in SCE's service area was 102,521 gigawatt-hours in 2018 (CEC 2019).[1] Sources of electricity sold by SCE in 2017, the latest year for which data are available, were:

- 32 percent renewable, consisting mostly of solar and wind
- 8 percent large hydroelectric
- 20 percent natural gas
- 6 percent nuclear
- 34 percent unspecified sources—that is, not traceable to specific sources (SCE 2018)[2]

Gas

Southern California Gas Company provides gas service in Brea and has facilities throughout the city, including the project site. The service area of SoCalGas 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 2015c). Total natural gas supplies available to SoCalGas for year 2018 were 3,055 million cubic feet per day (MMcf/day), and 3,385 MMcf/day for 2019 (CGEU 2018). Total natural gas consumption in SoCalGas's service area was 719,423 MMcf for 2018, which is equivalent to 1,971 MMcf/day (CEC 2019).

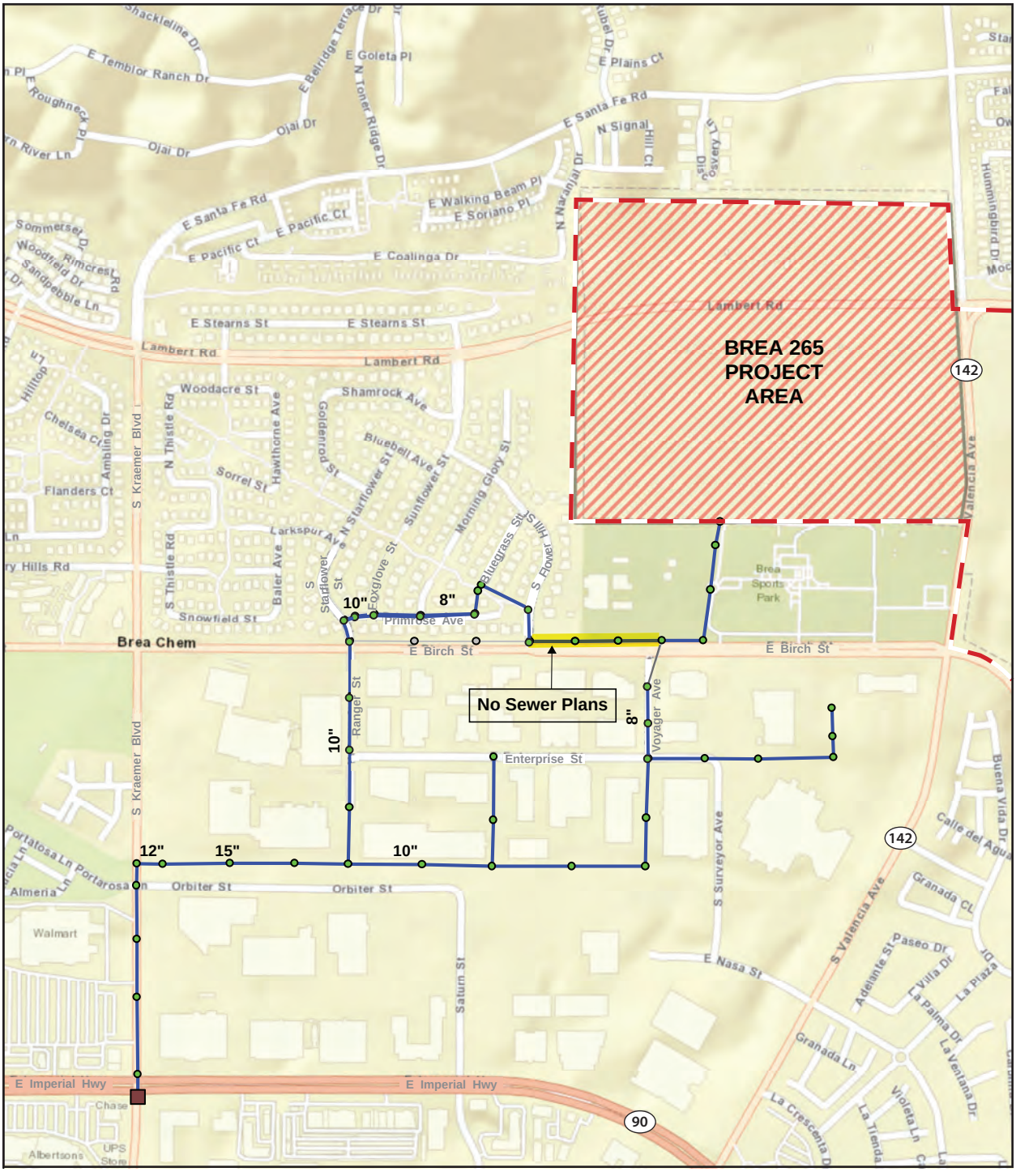
Solid Waste

The City of Brea contracts with Republic Services, also known as Brea Disposal, for trash service and collection. The collected wastes are consolidated and sorted at local transfer stations and transported to disposal sites. Once the materials recovery facility processes solid waste from recyclable, recyclable materials are bundled and transferred for immediate shipment to domestic and international markets. Nonrecyclable waste is moved to solid waste transfer operation for final processing and consolidation before delivery to landfills.

[1] One gigawatt-hour is equivalent to one million kilowatt-hours.
[2] The electricity sources listed above reflect changes after the 2013 closure of the San Onofre Nuclear Generating Station, which is owned by SCE.

Figure 5.19-1 - City of Brea Tributary Sewer Pipelines

5. Environmental Analysis



Specific Plan Boundary

0 1,000
Scale (Feet)

Source: Psomas, 2022

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UTILITIES AND SERVICE SYSTEMS

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Solid waste landfill capacity is provided to Brea by OC Waste & Recycling. Orange County owns and operates three active landfills: Olinda Alpha Landfill at 1942 North Valencia Avenue in Brea; Frank R. Bowerman Landfill at 11002 Bee Canyon Access Road in Irvine; and Prima Deshecha Landfill at 32250 La Pata Avenue in San Juan Capistrano. The waste generated by Brea is taken to the Olinda Alpha Landfill. The Olinda Alpha Landfill accepts a maximum of 8,000 tons per day and currently receives an average of approximately 7,000 tons per day. The landfill had an estimated remaining capacity of approximately 43.9 million cubic yards as of June 30, 2013.

To ensure that the maximum permitted daily tonnage at a particular landfill is not exceeded, waste haulers can be diverted to another OC Recycling landfill or one of the transfer stations throughout the county.

5.19.2 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:

U-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

U-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

U-3 Result in a determination by the waste water treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

U-4 Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

U-5 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

5.19.3 Plans, Programs, and Policies

Regulatory Requirement

PPP USS-1 The proposed project will be required to comply with the following regulations.

- California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11).
- SB 610 (Chapter 643, Statutes of 2001) and SB 221 (Chapter 642, Statutes of 2001).
- California Green Building Standards Code, Chapter 5, Nonresidential Mandatory Measures, Division 5.3, Water Efficiency and Conservation.

- California Green Building Standards Code, Chapter 4, Residential Mandatory Measures, Division 4.3, Water Efficiency and Conservation.
- Energy Efficiency Standards for Residential and Nonresidential Buildings (24 CCR Part 6)
- California's Appliance Efficiency Regulations (CCR Title 20, Parts 1600–1608)

5.19.4 Environmental Impacts

5.19.4.1 IMPACT ANALYSIS

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.19-1: The proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. However, the proposed project would require new and expanded water distribution facilities. [Threshold U-1]

Water

Implementation of the proposed project would result in increased water facilities demand in the project area. As shown in Table 5.19-2, *Proposed Project Water Demand Factors for Residential Uses,* the proposed residential uses for the project would result in an average demand of 289,130 gpd or 323.9 afy (Psomas 2022a). The residential water use factors used for the project are conservatively higher than those used in the City's 2020 UWMP for new residential development.

Table 5.19-2 Proposed Project Water Demand Factors for Residential Uses

Proposed Land Use	Acres	Dwelling Units/Acre	Dwelling Units	Factor (gpd/du)	Average Demand (gpd)
West of Valencia Avenue					
Low Density Residential (LDR)	25.2	4.2	105	380	39,900
Public Safety/Civic Uses[1]	n/a	n/a	n/a	n/a	330
Medium Density Residential (MDR)	49.0	10.3	507	160	81,120
Subtotal	**74.2**	**8.2**	**612**	**198**	**121,350**
East of Valencia Avenue					
Low Density Residential (LDR)	109.4	3.1	345	420	144,900
Medium Density Residential (MDR)	13.9	10.0	143	160	22,880
Subtotal	**123.3**	**4.0**	**488**	**344**	**167,780**
Total Domestic	**197.5**	**5.6**	**1,100**	**n/a**	**289,130 gpd/ 323.9 afy**

Source: Psomas 2022b.
[1] Included in LDR land use in Planning Area 11. Average flow assumes 6 personnel and 55 gallons per capita per day.
du = dwelling units
gpd = gallons per day

Table 5.19-3, *Proposed Irrigation Demand Factors,* shows the irrigation water demand estimate for the parks and common landscaped areas of the proposed project. The total park and recreation area within the project site includes a 13-acre sports park west of Valencia Avenue and a 2.1-acre staging area park east of Rose Drive, and 65 acres of irrigated common areas were assumed. The estimate of irrigation demands was based on a landscape irrigation factor of 2,040 gpd/acre for the project residential area and the maximum applied water allowance using evapotranspiration data for Monrovia, California. The Monrovia California Irrigation Management Information System station is the closest station to the project site, and the evapotranspiration for that station was 49.85 inches per year (Psomas 2022b). Additional details of the irrigation demand factors used in this analysis are in Appendix P.

Table 5.19-3 Proposed Irrigation Demand Factors

Land Use	Acres	Factor (gpd/ac)	Gallons per Day
Irrigated Common Areas	65.00	2,040	132,602
Parks/Recreation	15.10	2,040	30,805
Total	**80.10**	**-**	**163,407 gpd/ 183 afy**

Source: Psomas 2022b.

Table 5.19-4, *Water Demand Summary*, summarizes the total water demand for the proposed project based on the factors shown in Table 5.19-2 for residential uses and Table 5.19-3 for parks and irrigated areas. The projected water use for the proposed project would be 452,537 gpd (507 afy). New developments are required to comply with current water conservation standards and are expected to have lower than average demand when compared to current citywide use. The recommended factors used for the water systems analysis are sufficiently conservative and appropriate for planning purposes.

Table 5.19-4 Water Demand Summary

Water Use	Gallons per Day	Acre-Feet per Year
Residential	289,130	323.9
Irrigation	163,407	483
Total Water Demand	**452,537**	**507**

Source: Psomas 2002b.

Figure 3-20, *Conceptual Water System*, depicts the two water-pressure zones for the project site and the proposed water distribution system. Water service to the project site would be provided from two pressure zones, 790 zone (with pressure-reducing stations) and 605 zone. The City's water system was evaluated to determine impacts of the projected water demands on the existing distribution system and the potential for offsite improvement requirements that are in Appendix P. The on-site water systems analysis concluded that the City's existing water system can supply sufficient service pressure and fire flow to the project site to meet the applicable design criteria based on the City's 2021 Water System Master Plan update (2021 WMP). However, the proposed project would add an average day demand of approximately 300 gpm and a maximum day demand of approximately 500 gpm supplied primarily through the combination of Valencia Reservoir and the Berry Street high-pressure pumps (790 zone). This system is already strained during peak demand conditions, and the

City is unable to maintain water levels in Valencia Reservoir. There is also an existing pumping deficiency in the 790 zone. Added demands from the proposed project would exacerbate these issues. Therefore, without the following off-site water improvements identified in the 2021 WMP, the off-site water distribution system would not be able to adequately accommodate the proposed project, and impacts would be potentially significant:

- Addition of a high pressure pump at Berry Street booster pump station with a minimum capacity of 1,778 gpm to increase pumping capacity in the 790 zone.
- Construct new 24-inch pipelines in Valencia Avenue to increase system capacity to fill Valencia Reservoir as follows and illustrated in Appendix B of the Water Systems Analysis (see DEIR Appendix P).
    - Approximately 1,270 linear feet of new 24-inch pipeline from the reservoir inlet/outlet to Sandpiper Way, replacing existing 12-inch pipeline.
    - Approximately 2,060 linear feet of new 24-inch pipeline from Lambert Road to Birch Street, replacing existing 12-inch pipeline.

Sewer

The water and wastewater treatment needs of the proposed project would be served by OCSD, which operates two treatment/reclamation plants. The combined maximum secondary treatment capacity of Plant No. 1 and Plant No. 2 is 332 mgd (OCSD 2022c). The current available capacity of Plant No. 1 is 91 mgd, and the plant would be able to accommodate the average sewer flows generated from the proposed project, which would be 90,390 gpd (Psomas 2022c). The treatment plants currently operate with an average daily intake of 183 mgd—117 mgd at Plant No. 1 and 66 mgd at Plant No. 2. Therefore, the proposed project would contribute less than a 0.1 percent increase to the existing flow (OCSD 2022). Implementation of the proposed project would result in a less than significant impact.

Electricity

The proposed project would require construction and relocation of electrical facilities. All electrical system would be constructed underground, and the improvements would be required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and CALGreen standards (Title 24, Part 11). The proposed project is anticipated to consume approximately 6,681,830 kilowatt-hours per year of electricity from uses such as heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; lighting; and use of onsite equipment and appliances. (PlaceWorks 2022). Electrical service to the proposed project would be provided by SCE through connections to existing offsite electrical lines and new onsite infrastructure. While the proposed project would increase energy demand at the site compared to existing conditions, it would be required to comply with the applicable Building Energy Efficiency Standards and CALGreen. SCE is a regional public utilities company and has the capacity to provide electric power to the project site. Construction of new electric facilities and relocation of existing SCE facilities are included as part of the project description. Although implementation of the proposed project would create additional demands on electric power infrastructure, the increased demands are projected to be within the service capabilities of SCE, and impacts would be less than significant.

Natural Gas

The proposed project would require construction and relocation of existing gas systems. All gas system would be constructed underground, and the improvements would be required to achieve the current to achieve the current California Building Energy and Efficiency Standards and CALGreen standards.

The proposed project is anticipated consume 26,432,500 thousand-British-thermal-units per year (PlaceWorks 2022). Additional gas services infrastructure would be added to the existing system by SoCalGas as necessary to meet the requirements. There are extensive and reliable gas services in the area, and the improvements would comply with the SoCalGas policies and extension rules filed with the Public Utilities Commission when the contractual agreements are made. As a public utility, SoCalGas is under the auspices of the Public Utilities Commission and federal regulatory agencies. Should these agencies take any action that affects gas supply or the conditions under which service is available, gas service would be provided in accordance with revised conditions. Construction of new natural gas facilities and relocation of existing SoCalGas facilities are part of the project description. Although implementation of the proposed project would create additional demands on natural gas supplies and distribution infrastructure, the increased demands are projected to be within the service capabilities of SoCalGas, and impacts would be less than significant.

Telecommunications

Although the project site is largely undeveloped, the area surrounding the project site is developed and served by regional telephone service such as AT&T. The proposed project would require reconfiguration and improvements to the existing telephone facilities to accommodate the proposed development. Provision of telephone service improvements would not cause substantial or unusual adverse physical impacts to the environment. Construction of new dry utilities such as telecommunication facilities and relocation of existing facilities are part of the project description. Although implementation of the proposed project would create additional demands on telecommunications infrastructure, the increased demands are projected to be within the service capabilities of various telecommunications providers such as AT&T, and impacts would be less than significant.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.19-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. [Threshold U-2]

The water supply assessment (WSA) prepared for the proposed project is included as Appendix Q. According to the WSA, the water demand for the existing land uses is accounted for in the existing demand reported in the City's 2020 UWMP. Projected water demand for the proposed project was specifically addressed as "Under Entitlement Review" in Table 3-4 of the 2020 UWMP, Developments in the City. However, the projected demographic data in the 2020 UWMP does not appear to account for enough future dwelling units to include the proposed project. Therefore, it was assumed for the WSA that the city's water demands in the 2020 UWMP are assumed to not include the increased demands attributed to the proposed project. These demands were added to the projected city demands, and the WSA concluded that although supplemental water supply would

be needed, there is sufficient and reliable water supply for the city and the proposed project. The supply data in the reliability analysis in the 2020 UWMP matched the projected demand and did not account for additional supplies available. However, the City can purchase more Metropolitan water through MWDOC, who demonstrates surplus (see Appendix Q, Table 5.4, Metropolitan Regional Water Demands Single Dry, Multiple Dry and Average Years). Therefore, the City is projected to have sufficient imported and groundwater supplies to meet normal, single-dry year, and multiple-dry year conditions with the addition of the proposed project's demands because Metropolitan has projected supply surpluses for each of these conditions (even without supplies under development and potential supplies). Also, additional groundwater supplies are available for purchase through CDWC. It should be noted that imported water supplies are increased in single and multiple dry years consistent with Metropolitan's 2020 UWMP due to the fact that in dry years Metropolitan draws water from surface and groundwater storage programs.

As shown in Table 5.19-4, the estimated water demand for the proposed project is 507 afy. However, consistent with the City's UWMP, the WSA for the project increased the estimated water demand by 5 percent to account for projected water loss. Therefore, water supply analysis is based on the estimated buildout water demand of 532 afy for the project shown in Table 5.19-5, *Projected Normal, Single Dry-Year, and Multiple Dry-Year Water Supply and Demand*. The City is projected to have sufficient imported and groundwater supplies to meet normal, single-dry year, and multiple-dry year conditions with the addition of the proposed project. Therefore, the proposed project would not result in insufficient water supplies during normal, dry, and multiple dry years, and impacts would be less than significant.

Table 5.19-5 Projected Normal, Single Dry-Year, and Multiple Dry-Year Water Supply and Demand

Supply Sources/ Demands[1]	FY 2025 (af)	FY 2030 (af)	FY 2035 (af)	FY 2040 (af)	FY 2045 (af)
NORMAL YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	960	1,112	1,108	1,142	1,162
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,075**	**10,227**	**10,223**	**10,257**	**10,277**
Demand[3]					
Total City Demand without Proposed Project[4]	9,543	9,695	9,691	9,725	9,745
Additional Proposed Project Demand[5]	532	532	532	532	532
Total Demand[6]	**10,075**	**10,227**	**10,223**	**10,257**	**10,277**
SINGLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,564	1,726	1,721	1,758	1,779
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,679**	**10,941**	**10,836**	**10,873**	**10,894**
Demand[3]					
Total City Demand without Proposed Project[4]	10,115	10,277	10,272	10,309	10,330
Additional Proposed Project Demand[7]	564	564	564	564	564
Total Demand[8]	**10,679**	**10,841**	**10,836**	**10,873**	**10,894**

Table 5.19-5 Projected Normal, Single Dry-Year, and Multiple Dry-Year Water Supply and Demand

Supply Sources/ Demands[1]	FY 2025 (af)	FY 2030 (af)	FY 2035 (af)	FY 2040 (af)	FY 2045 (af)
FIRST MULTIPLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,195	1,576	1,705	1,708	1,742
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,310**	**10,691**	**10,820**	**10,823**	**10,857**
Demand					
Total City Demand without Project	9,766	10,147	10,276	10,279	10,313
Proposed Project Demand	544	544	544	544	544
Total Demand[8]	**10,310**	**10,691**	**10,820**	**10,823**	**10,857**
SECOND MULTIPLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,288	1,614	1,709	1,721	1,751
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,403**	**10,729**	**10,824**	**10,836**	**10,866**
Demand					
Total City Demand without Project	9,854	10,180	10,275	10,287	10,317
Proposed Project Demand	549	549	549	549	549
Total Demand	**10,403**	**10,729**	**10,824**	**10,836**	**10,866**
THIRD MULTIPLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,380	1,651	1,713	1,733	1,761
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,495**	**10,766**	**10,828**	**10,848**	**10,876**
Demand					
Total City Demand without Project	9,941	10,212	10,274	10,294	10,322
Proposed Project Demand	554	554	554	554	554
Total Demand	**10,495**	**10,766**	**10,828**	**10,848**	**10,876**
FOURTH MULTIPLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,472	1,688	1,717	1,746	1,770
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,587**	**10,803**	**10,832**	**10,861**	**10,885**
Demand					
Total City Demand without Project	10,028	10,244	10,273	10,302	10,326
Proposed Project Demand	559	559	559	559	559
Total Demand	**10,587**	**10,803**	**10,832**	**10,861**	**10,885**

Table 5.19-5 Projected Normal, Single Dry-Year, and Multiple Dry-Year Water Supply and Demand

Supply Sources/ Demands[1]	FY 2025 (af)	FY 2030 (af)	FY 2035 (af)	FY 2040 (af)	FY 2045 (af)
FIFTH MULTIPLE DRY YEAR					
Supply					
CDWD	9,000	9,000	9,000	9,000	9,000
MWDOC[1]	1,564	1,726	1,721	1,758	1,779
Local Groundwater[2]	115	115	115	115	115
Total Supply	**10,679**	**10,841**	**10,836**	**10,873**	**10,894**
Demand					
Total City Demand without Project	10,115	10,277	10,272	10,309	10,330
Proposed Project Demand	564	564	564	564	564
Total Demand	**10,679**	**10,841**	**10,836**	**10,873**	**10,894**

Source: Psomas 2022a
1 The amount of MWDOC imported water supply to meet demand.
2 Local groundwater for irrigation uses and not utilized by the proposed project.
3 All normal-year demand includes 5% nonrevenue water (water loss) consistent with the City's 2020 UWMP.
4 Normal year demand based on the City's 2020 UWMP, assumed to not include the proposed project's demand.
5 Project demand based on Brea 265 Specific Plan; see Table 4-1.
6 Normal year demand based on the City's 2020 UWMP plus proposed project demand.
7 Project demand based on Brea 265 Specific Plan land use and increased by 6 percent for single-dry year.
8 Single-dry year demand based on the City's 2020 UWMP plus proposed project demand.

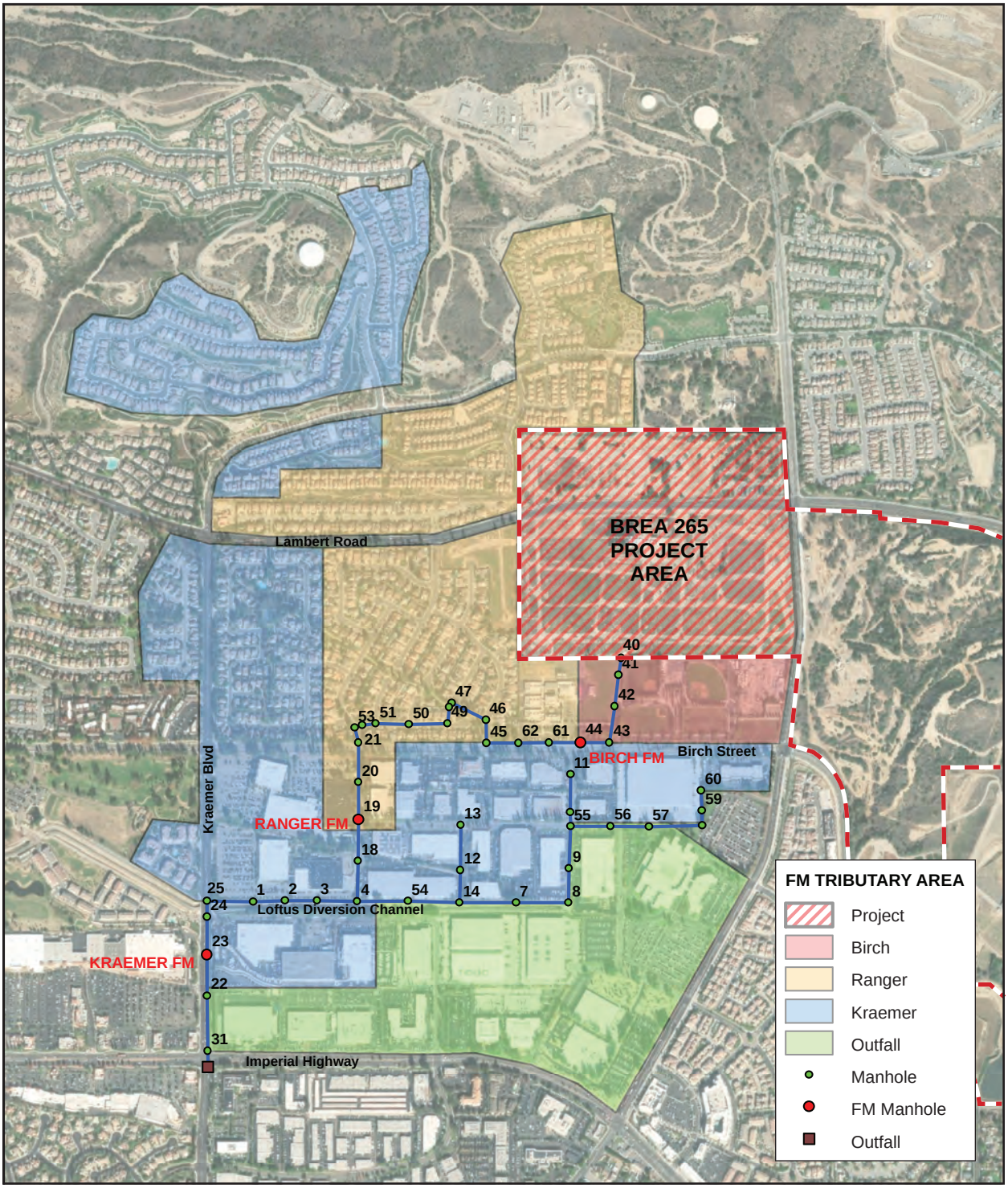
Level of Significance Before Mitigation: Less than significant impact.

Impact 5.19-3: The proposed project would result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. [Threshold U-3]

City of Brea

Implementation of the proposed project would generate an increase in wastewater. The conceptual sewer system within the project site is shown on Figure 3-21, *Conceptual Sewer System*. A Technical Memorandum, Brea 265 Sewer System Analysis, was prepared by Psomas on March 3, 2022 (Psomas 2022c; Appendix R), to evaluate sewer capacity impacts from development of the proposed project. Table 5.19-6, *Brea 265 West Estimated Sewer Loading*, and Table 5.19-7, *Brea 265 West Estimated Sewer Master Plan Loading*, show the estimated sewer generation summaries for the western portion of the project site. For Table 5.19-6, the projected flows were calculated based on the flow monitoring data for each of the tributary basins—Birch, Ranger, and Kraemer—and the corresponding land use within each of the areas. Sewer flow monitoring was conducted from September 12 to October 1, 2019, in the tributary areas shown on Figure 5.19-2, *Tributary Area Sewer Flow Monitoring Locations*. Table 5.19-6 presents a realistic projection for the future flows, and the factors in Table 5.19-7 are from the 2021 SMP. The proposed project was identified in the 2021 SMP and evaluated as a near-term project to determine any resulting capacity constraints. The 2021 SMP projected an average sewer flow rate of 145,000 gpd for the western portion of the project site and 114,600 gpd for the eastern portion of the project site. Table 5.19-7 shows the sewer loading factors used in the 2021 SMP for the uses proposed in the project site.

Figure 5.19-2 - Tributary Area Sewer Flow Monitoring Locations
5. Environmental Analysis



Specific Plan Boundary

0 1,500
Scale (Feet)

Source: Psomas, 2022

5. Environmental Analysis
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Although the sewer loading factors shown in Table 5.19-6 based on flow monitoring and metered water use for similar products present a realistic projection of the future flows, factors shown in Table 5.19-7 from the 2021 SMP are used in the sewer analysis to consistent with the 2021 SMP as a conservative planning estimate. The resulting average dry weather flow (ADWF) for the western study area is 154,553 gpd.

Table 5.19-6 Brea 265 Western Area Estimated Sewer Loading

Land Use	Acres	Dwelling Unit/acre	Dwelling Units	Factor (gpd/du)	Average Flow	
					gpd	gpm
Low Density Residential	25.2	4.2	105	230	24,150	16.8
Public Safety/Civic Uses[1]	n/a	n/a	n/a	n/a	330[2]	0.2
Medium Density Residential	49	10.3	507	236	65,910	45.8
Subtotal	**74.2**	**n/a**	**612**	**240**	**90,390**	**62.8**

Source: Psomas 2022c.
[1] Included in LDR land use in Specific Plan (PA 11).
[2] Average flow assumes 6 personnel at 55 gallons per capita per day.
gpd = gallons per day
gpm = gallons per minute
du = dwelling unit

Table 5.19-7 Brea 265 Western Estimated Sewer Master Plan Loading

Land Use	Acres	Dwelling Unit/acre	Dwelling Unit	Factor (gpd/du)	Average Flow		Peak Dry Flow	
					gpd	gpm	gpd	gpm
Low Density Residential	25.2	4.2	105	270	28,350	19.7	56,487	39.2
Public Safety/Civic Uses[1]	n/a	n/a	n/a	n/a	330[2]	0.2	658	0.5
Medium Density Residential	49	10.3	507	248	125,736	87.3	250,528	174
Parks/Recreation	13	n/a	n/a	10.5	137	0.1	272	0.2
Open Space and ROW	7.3	n/a	n/a	n/a	0	0	0	0
Subtotal	**94.5**	**--**	**612**		**154,553**	**107.3**	**307,945**	**213.9**

Source: Psomas 2022c.
[1] Included in LDR land use in Specific Plan (PA 11).
[2] Average flow assumes 6 personnel at 55 gallons per capita per day.
gpd = gallons per day
gpm = gallons per minute
du = dwelling unit
ROW = right-of-way

Sewer flow for the eastern side of the project site is shown in Table 5.19-8. It is assumed that flows from the eastern side would discharge to OCSD's Carbon Canyon Interceptor. The location of the connection point or points, along with the on-site sewer collection system, are to be determined during preliminary design.

Table 5.19-8 Brea 265 Eastern Estimated Sewer Master Plan Loading

Land Use	Acres	Dwelling Unit/acre	Dwelling Unit	Factor (gpd/du)	Average Flow		Peak Dry Flow	
					gpd	gpm	gpd	gpm
Low Density Residential	109.9	3.1	345	270	93,150	64.7	188,349	130.8
Medium Density Residential	13.9	10.0	143	248	35,464	24.6	71,708	49.8
Parks/Recreation	2.1			10.5	22	0	45	0
Open Space and ROW	41.7							
Subtotal	**167.6**	**--**	**488**		**128,636**	**107.3**	**260,098**	**180.6**

Source: Psomas 2022c.
gpd = gallons per day
gpm = gallons per minute
du = dwelling unit
ROW = right-of-way

The sewer technical memo used the sewer loads based on the flow monitoring data and corresponding land uses to model the existing land uses within the tributary areas and added the proposed project flow using the sewer master planning criteria in Table 5.19-7. The model assumed that all sewer flow from the project area west of Valencia Avenue to discharge south to manhole (MH) 40. The SMP criteria uses peak dry weather flow (PDWF) and peak wet weather flow (PWWF) to evaluate pipe capacity. Detailed sewer model output for simulated PDWF and PWWF with and without the proposed project is in Appendix C of the sewer technical memorandum (see DEIR Appendix R). The model output found capacity constraints to sewer reaches along Birch Street and through the neighborhood north of Birch Street from project implementation, as shown on Figure 5.19-3, *Deficient Sewer Reaches With Project*. As shown, eight sewer reaches exceed the PWWF criteria from MH 44 downstream to MH 50; and one from MH 53 to MH 21 along Birch Street and through the neighborhood north of Birch Street. Therefore, without providing improvements as described below and shown on Figure 5.19-4, *Recommended Sewer Improvement Option 1*, or Figure 5.19-5, *Recommended Sewer Improvement Option 2*, sewer facilities impacts would be potentially significant.

- Reduce sewer flow downstream of MH 44 by providing one of the following options:
  - **Option 1:** Divert the sewer on Birch Street to the sewer in Voyager Avenue at MH 44 by constructing approximately 300 feet of 8-inch pipeline from MH 44 to MH 11 in Voyager Avenue (see Figure 5.19-4). All flow originating upstream of MH 44, including the proposed project, would be diverted to Voyager Avenue, with the existing pipeline that continues down Birch Street plugged at MH 44.
  - **Option 2:** Construct approximately 1,900 feet of new 10-inch sewer in Birch Street, diverting all flow tributary to MH 44 westward in Birch Street to MH 21 at Birch Street and Ranger Street (see Figure 5.19-5). Because there are no plans available for the identified deficient reaches along Birch Street, manholes should be surveyed to confirm inverts, pipeline slopes, and modeling results.

Figure 5.19-3 - Deficient Sewer Reaches with Project

5. Environmental Analysis



Source: Psomas, 2022

5. Environmental Analysis
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Figure 5.19-4 - Recommended Sewer Improvement Option 1

5. Environmental Analysis



Source: Psomas, 2022

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UTILITIES AND SERVICE SYSTEMS

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Figure 5.19-5 - Recommended Sewer Improvement Option 2

5. Environmental Analysis



Source: Psomas, 2022

5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

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OCSD Facilities

Sewage collected by the City of Brea tributary from the west of the project site would ultimately connect to the 21-inch OCSD sewer trunk at the Kraemer Boulevard interceptor at Imperial Highway, and the sewage from the 167.4 acres east of the project site would flow directly to the 33-inch OCSD Carbon Canyon Dam interceptor sewer trunk. OCSD's strategic planning uses maximum population densities and very conservative flow factors, which are appropriate for regional level planning. Therefore, it is assumed that any project-generated flows are accounted for in OCSD's projections and planning. In addition, OCSD provides ongoing analysis of the sewer system within its jurisdiction, ensuring the long-term functionality of OCSD facilities. The proposed project would result in less than significant impacts to OCSD sewer facilities.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.19-4: The proposed project would not 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. [Threshold U-4]

Waste from the project site would be transported to the Olinda Alpha landfill, which has an average daily disposal rate of 7,000 tons per day, although it is permitted up to 8,000 tons per day; thus, the landfill has a remaining daily intake capacity of 1,000 tons per day (OCWR 2018). The landfill has the capacity to serve residents and businesses until 2030 (OCWR 2018). The remaining capacity of the landfill is 34,200,000 cubic yards (CalRecycle 2018).

The California Department of Resources Recycling and Recovery (CalRecycle) calculates California's statewide per capita disposal using SB 1016's measurement system (CalRecycle 2019). Under this system, California had a per-resident disposal rate of 5.2 pounds/resident/day and a "diversion rate equivalent" of 58 percent. As described in Section 5.14, *Population and Housing*, of this DEIR, the proposed project is anticipated to result in an increase of 3,102 residents. Therefore, the proposed project is projected to generate approximately 16,130 pounds per day of solid waste at buildout. This increase would be 0.8 percent of the landfill's remaining daily allowable intake and could be accommodated.[3] Therefore, the project impacts on landfill capacity would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.19-5: The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. [Threshold U-5]

Solid waste would be generated during construction and operation of the proposed project. The proposed project would comply with all regulations pertaining to solid waste, such as the California Integrated Waste Management Act and the City's recycling and waste programs. The City and its construction contractor would comply with all applicable laws and regulations and make every effort to reuse and/or recycle the construction

[3] 16,130 lbs = 8.065 tons
8.065 tons /1,000 tons = 0.008065 = 0.8%

debris that would otherwise be taken to a landfill. Hazardous waste, such as paint used during construction, would be disposed of only at facilities permitted to receive them in accordance with local, state, and federal regulations. The proposed project would comply with all applicable federal, state, and local statutes and regulations related to solid waste disposal. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

5.19.5 Cumulative Impacts

Water Supply

The cumulative water supply and distribution system impact area would be the City's service area. The City's 2020 UWMP projects water demands from citywide growth, and the proposed project and other cumulative projects in the city are within the projected growth forecast. As discussed in Impact 5.19-2, surplus water can be purchased from Metropolitan to supplement the water demands for the proposed project and other cumulative projects if needed. Therefore, the total water supplies available to the City during normal, single-dry, and multi-dry year conditions within a 20-year projection would meet the projected water demand of the proposed project and future growth in the City's water service area. Furthermore, as discussed in Impact 5.19-1, the proposed project's impacts to offsite water distribution system would be reduced to less than significant by incorporating mitigation (Mitigation Measure USS-1) and meeting the City's 2021 Water Master Plan standards. Other development projects in the City would also be developed in compliance with the 2021 Water Master Plan and provide appropriate improvements so that no offsite water systems impacts occur. Therefore, no cumulatively significant water supply impact is anticipated.

Sewer

The proposed project would increase flows to the area sewer system, resulting in deficient sewer segments for the City's system west of Valencia Avenue. Development of other cumulative projects could also incrementally increase demand on sewer facilities, but other cumulative projects in the City of Brea's sewer system would not flow to the same sewer tributary as the proposed project before reaching the OCSD trunk. Provided that the proposed project's individual sewer impacts are reduced to less than significant by incorporating mitigation (Mitigation Measure USS-2), no cumulatively significant wastewater facilities impacts are anticipated to the City's system. The proposed project would also flow directly to OCSD's sewer facilities from the development east of Valencia Avenue. When combined with other cumulative development projects, the proposed project would incrementally increase demands on OCSD's facilities, including treatment demands in the OCSD service area. However, OCSD's strategic planning uses maximum population densities and very conservative flow factors, as appropriate for regional level planning. It is assumed that any project-generated flows are accounted for in OCSD's projections and planning. Moreover, OCSD provides ongoing analysis of the sewer system within its jurisdiction, ensuring the long-term functionality of OCSD facilities. Therefore, development of the proposed project, along with other cumulative projects in the City's and OCSD's sewer service area would not result in individually significant impacts with mitigation, and impacts would not be cumulatively considerable.

Electric Power

The proposed project would result in increased demand for electrical services. The projected citywide growth per the adopted General Plan would also increase demands for electrical services. However, SCE has adequate electric power capacity to serve the city's projected growth. Because the project site and the surrounding area are already served by SCE, no major infrastructure improvements would be necessary that could result in significant environmental impacts. Additionally, SCE already has an appropriate payment mechanism in place to fund and provide necessary improvements. No significant cumulative impacts are anticipated.

Natural Gas

The proposed project would result in increased demand for natural gas services. The projected citywide growth per the adopted General Plan would also increase demands for gas services. However, SoCalGas has adequate natural gas capacity to serve the city's projected growth. Because the project site and the surrounding area are already served by SoCalGas, no major infrastructure improvements would be necessary that could result in significant environmental impacts. Additionally, SoCalGas already has an appropriate payment mechanism in place to fund and provide necessary improvements. No significant cumulative impacts are anticipated.

Solid Waste

The proposed project would result in increased demand for solid waste compared to the existing uses. However, the proposed project, combined with other cumulative projects in the city, are required to comply with the existing recycling and waste programs to reduce and divert solid waste, and there is remaining capacity in the landfills that serve the city to accommodate the proposed project and the cumulative projects. Therefore, the proposed project would not cumulatively affect long-term solid waste collection infrastructure in excess of the existing capacity.

5.19.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.19-2, 5.19-4, and 5.19-5.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.19-1** The off-site water distribution system would not be able to adequately accommodate the proposed project.
- **Impact 5.19-3** Implementation of the proposed project would result in potentially significant sewer facilities impact to the City of Brea sewer lines.

5.19.7 Mitigation Measures

Impact 5.19-1

USS-1 The project applicant shall coordinate with the City of Brea to make payments to fund its fair share of the following capital improvements related to offsite water systems, as identified in the City of Brea 2021 Water System Master Plan Update:

- Increase pumping capacity to the 790 Zone at Berry Street booster pump station (BPS) by providing an additional high-pressure pump at Beery Street BPS with a minimum capacity of 1,778 gallons per minute (gpm).
- Construct new 24-inch pipelines in Valencia Avenue to increase system capacity to fill Valencia Reservoir.
    - Approximately 1,270 linear feet (LF) of new 24-inch pipeline from the Reservoir inlet/outlet to Sandpiper Way, replacing existing 12-inch pipeline.
    - Approximately 2,060 LF of new 24-inch pipeline from Lambert Road to Birch Street, replacing existing 12-inch pipeline.

Impact 5.19-3

USS-2 The project applicant shall coordinate with the City of Brea to make payments to fund its fair share of the following capital improvements:

- Reduce sewer flow downstream of MH 44 by providing one of the following options:
    - Construct a new 8-inch sewer line (approximately 300 feet) from MH 44 southward in Birch Street to MH 11 in Voyager Avenue. All flow originating upstream of MH 44 shall be diverted to Voyager Avenue, with the existing pipeline that continues down Birch Street plugged at MH 44; or
    - Construct a new 10-inch sewer line (approximately 1,900 feet) in Birch Street diverting all flow tributary to MH 44 westerly in Birch Street to MH 21 at Birch and Ranger Street.

5.19.8 Level of Significance After Mitigation

The mitigation measures 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 utilities remain.

5.19.9 References

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5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

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5.20 WILDFIRE

This section describes impacts of the proposed project on wildfire. The information in this section is based on review of the preliminary site plan, aerial photographs, street views, and other available information.

5.20.1 Environmental Setting

5.20.1.1 REGULATORY BACKGROUND

Federal

Stafford Disaster Relief and Emergency Assistance Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) is a federal law designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. The Stafford Act is a 1988 amended version of the Disaster Relief Act of 1974. It created the system in place today by which a presidential disaster declaration or an emergency declaration triggers financial and physical assistance through the Federal Emergency Management Agency.

State Regulations

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports the CAL FIRE mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Marshal provides for fire prevention by enforcing fire-related laws in state-owned or -operated buildings, investigating arson fires in California, licensing those who inspect and service fire protection systems, approving fireworks for use in California, regulating the use of chemical flame retardants, evaluating building materials against fire safety standards, regulating hazardous liquid pipelines, and tracking incident statistics for local and state government emergency response agencies. Classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings. Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas. Final zone class (moderate, high, and very high) is based on the average scores for the zone (CAL FIRE 2012).

Office of Emergency Services

The California Governor's Office of Emergency Services is responsible for coordinating overall state agency response to disasters; ensuring the state's readiness to respond to and recover from all hazards; and assisting local governments in their emergency preparedness, response, recovery, and mitigation.

California Fire Plan

The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.

Building Code

The California Building Code (CBC)—California Code of Regulations, Title 24, Part 2—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. It is updated every three years, and the current, 2019 CBC went into effect January 1, 2020. The CBC is effective statewide but a local jurisdiction may adopt more restrictive standards based on local conditions and under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential building plans are 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.

Fire Code

The California Fire Code (CFC) incorporates by adoption the International Fire Code of the International Code Council, with California amendments (California Code of Regulations, Title 24, Part 9). The CFC is updated every three years, and the current 2019, CFC went into effect January 1, 2020. The CFC is effective statewide but a local jurisdiction may adopt more restrictive standards based on local conditions and under specific amendment rules prescribed by the State Building Standards Commission. The CFC regulates building standards, 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

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.

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.

Defensible Space

California Public Resources Code (PRC) Sections 4291 et seq. require removal of brush, flammable vegetation, or combustible growth within 100 feet of buildings. 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 is maintained to manage fuels and does not form a means of rapid fire transmission to a structure. Requirements regarding hazardous vegetation and fuel management are also in Sections 4906 and 4907 of the CFC.

PRC Section 4290 requires that all parcels one acre or larger provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road.

Regional

County of Orange and Orange County Fire Authority Local Hazard Mitigation Plan

The mission of the County of Orange and Orange County Fire Authority Local Hazard Mitigation Plan is to promote sound public policy designed to protect residents, critical facilities, infrastructure, key resources, private property, and the environment from natural hazards in county unincorporated area, fire hazards in the Orange County Fire Authority (OCFA) service area, and County- and OCFA-owned facilities. The OCFA provides fire suppression and prevention services to county unincorporated areas and other jurisdictions and contracts under its joint powers authority.

Orange County Fire Authority Fire Prevention Guidelines

- "Fire Master Plans for Commercial & Residential Development" (Guideline B-09): This guideline pertains to the creation and maintenance of fire department access roadways, access walkways to and around buildings, and hydrant quantity and placement as required by the 2016 CFC and CBC and as amended by local ordinance. (OCFA 2017a)

- "Vegetation Management Guideline Technical Design for New Construction Fuel Modification Plans and Maintenance Program" (Guideline C-05): Fuel modification plans require that landscaped areas adjacent to new buildings be dedicated for permanent vegetation management activities. This guideline covers the timing of plans for construction, plan criteria needed for approval, the resource agency plant list for the zones, new construction inspection requirements, and introductory maintenance information. (OCFA 2017c)

Local

Brea Fire Department

Brea Fire Department provides 24-hour emergency response to a wide variety of critical situations, including fires and hazardous materials incidents. In addition, the department operates a very active Fire Prevention and Emergency Preparedness Program, which provides for fire inspections, hazardous process permitting, fire code enforcement, public education, and business emergency planning in accordance with the California Code of Regulations (Brea 2019a).

Brea Very High Fire Hazard Severity Zone Requirements Technical Design for New Construction Fuel Modification Plans and Maintenance Program

The purpose of this guideline, dated January 14, 2019, is to provide information on how fuel modification zones in Brea are to be designed, installed, and maintained in order to meet safety requirements. Vegetation management practices are implemented and enforced through fuel modification and defensible space. Prior to beginning the grading and/or construction process, developers and builders are required to receive approval from Brea Fire for the design of a fuel modification plan and for the installation of fuel modification zones. Separately, the CFC and PRC require land owners to implement and annually maintain vegetation reduction activity and a defensible space of up to 100 feet between their structure and the wildfire area, measured from their structure to their property line. Defensible space is required for land owners in Brea when a fuel modification plan and installation were not previously approved. This guideline addresses only the fuel modification design and maintenance process requirements.

Emergency Response Planning

The City of Brea has an active emergency preparedness program coordinated by a professional emergency manager. Public programs available range from those provided upon the request of an organization or group, to the more structured Brea Community Emergency Response Team classes, offered periodically. The five key elements of the City's Emergency Preparedness Program are:

- Development and maintenance of the City's Emergency Response Plan.
- Development and maintenance of the City's Emergency Operations Center.
- Coordination of preparedness, training, and exercises for city staff to be sure they are ready to respond to any emergency.
- Public education and outreach to the residents and businesses of Brea.
- Funding recovery following disasters. (Brea 2019a)

City of Brea General Plan

The City of Brea General Plan Chapter 6, Public Safety, includes goals and policies aimed at ensuring public safety by protecting the community from hazards associated with hazardous materials, wildland fires, flooding, and seismic activity and geologic conditions. Applicable policies include:

- **Policy PS-1.6.** Impose special conditions as needed on development projects to ensure that adequate fire protection measures are in place and maintained.
- **Policy PS-6.2.** Encourage residents to plant and maintain fire retardant slope cover to reduce the risk of brush fire in areas adjacent to the canyons and develop and implement stringent site design and maintenance standards for areas with high fire potential. To the extent possible, native, noninvasive plant material are encouraged.

- **Policy PS-6.3.** Assure provision of adequate fire equipment access and fire suppression resources to all developed and open space areas.
- **Policy PS-6.4.** Require new development to ensure that the City's five-minute fire response time be maintained.

City of Brea Municipal Code

The 2019 CBC is adopted with certain modifications as Chapter 15.08, Building Code, of the municipal code. The 2019 CFC is adopted with certain modifications as Chapter 16.04, Brea Fire Code, of the municipal code.

5.20.1.2 EXISTING CONDITIONS

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. Many species of native California plants are adapted to fire, which has always been a natural component of the Earth's ecosystems. However, there is an important distinction between low-intensity natural wildfires that are set or controlled for a particular purpose by a land manager, and wildfires that burn out of control and are made unpredictable by changes in weather (CAL FIRE 1999).

Wildfire Trends in Recent Decades

Global climate change is raising temperatures in many forested areas in the North America. Higher temperatures contribute to increased tree mortality, lengthening of fire seasons, and increasing the number of large, high-intensity fires (CCI 2021). 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 (USGS 2012). Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation they replace; thus, such conversion exacerbates wildfire hazards (UC ANR 2009).

Wildfires now burn year-round in California (SBFFP and CAL FIRE 2018), and Orange County experiences destructive wildland fires almost every year, particularly in the fall. Wildland fires in the county range from small, localized fires to fires covering thousands of acres (Orange County and OCFA 2021). Table 5.20-1 shows federal disaster declarations for fires, including wildfires, in Orange County.

Table 5.20-1 Federal Disaster Declarations Related to Fire in Orange County

Disaster Number	Year	Incident Name or Type
FM-5383	2021	Bond Fire
FM-5381	2021	Blue Ridge Fire
FM-5380	2021	Silverado Fire
FM-5268	2018	Wildfires (Holy Fire)
DR-4344	2018	Canyon 2 Fire
FM-5213	2017	Canyon Fire
FM-2792	2008	Freeway Fire Complex
DR-1810	2008	Wildfires
FM-2737	2007	Santiago Fire
FM-2683	2007	241 Fire
EM-3279	2007	Wildfires
DR-1731	2007	Wildfires, Flooding, Mud Flows, and Debris Flows
FM-2737	2006	Sierra Fire
FS-2405	2002	Antonio Fire
EM-3120	1996	Severe Firestorms
DR-1005	1993	Fires, Mud/Landslide, Flooding, Soil Erosion
DR-657	1982	Urban Fire
DR-635	1980	Brush and Timber Fires

Source: Orange County and OCFA 2021.

Wildfire Effects

Debris Flows After Wildfires

Postfire landslide hazards include fast-moving, highly destructive debris flows in the years following wildfires and after high-intensity rainfall events, and flows that are generated over longer time periods and accompanied by root decay and loss of soil strength. Postfire debris flows are particularly hazardous because they can happen with little warning, sweep away objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows carry larger fragments than mudflows.

Fires increase the potential for debris flows in two ways:

- Fires bake soil into a hard crust that repels water.
- Fires destroy vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil. (USGS 2018)

Postfire debris flows are most common in the two years after a fire, usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than unburned. 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).

The USGS conducts postfire debris-flow hazard assessments for selected fires in the western US. The Canyon 2 Fire that burned 9,143 acers in the Anaheim Hills area was the only wildfire in Orange County with a debris flow hazard for the years 2017 and 2018 (USGS 2019). In 2018/19, the Holy Fire generated several significant debris flows in area of Trabuco Creek, and in 2020/21, the Bond Fire created debris impacts in the Silverado, Williams, and Modjeska Canyon areas (Orange County and OCFA 2021).

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 that can penetrate deep into the lungs, causing a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is also 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).

Fire Responsibility Areas

Wildland fire protection in California is the responsibility of either the state, local, or federal government. State responsibility areas (SRA) are where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires. The SRAs form one large area over 31 million acres, and CAL FIRE provides a basic level of wildland fire prevention and protection services.

Local responsibility areas (LRA) include incorporated cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government (CAL FIRE 2012). CAL FIRE uses an extension of the SRA model for fire hazard severity zones as the basis for evaluating fire hazard in LRAs. The LRA hazard rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation in the urban area.

Fire Hazard Severity Zones

CAL FIRE is mandated by Public Resources Code Sections 4201 to 4204 and California Government Code Sections 51175 to 51189 to identify fire hazard severity zones (FHSZ) for all communities in California. These are areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors. In SRAs, CAL FIRE has mapped three hazard ranges—moderate, high, and very high. In LRAs, the law only requires identification of very high FHSZs. Local governments accept CAL FIRE's determination or make other, local determinations.

Wildfire Potential in the Specific Plan Area

The project site is in the City of Brea's LRA as a very high FHSZ, and in the OCFA's unincorporated LRA as a very high FHSZ (CAL FIRE 2011a and CAL FIRE 2011b). Figure 5.20-1, *Very High Fire Hazard Areas*, shows areas within very high FHSZs near the project site, which generally includes areas to the north and east.

Brea is not in an area susceptible to debris-flow hazard. The western boundary of the area susceptible to debris-flow from the Canyon 2 Fire is seven miles southeast of the city (USGS 2019).

Firefighting Resources

Brea Fire and OCFA currently provide fire protection and emergency medical services to the project site. The closest fire stations to the Specific Plan area are Brea Fire Station #3 at 400 North Kraemer Boulevard, approximately 0.4 mile to the west, and Fire Station #4 at 198 N Olinda Place, approximately 2 miles to the east. OCFA's Battalion Station 34 is at 1530 N. Valencia Avenue, approximately 1.8 miles to the southwest in Placentia.

Fire suppression is an integrated, interagency effort. The California Fire Service and Rescue Emergency Mutual Aid System, established by the Governor's Office of Emergency Services, divides the state into six regions. Orange County is in Region 1, which consists of coastal counties from Orange County to San Luis Obispo County. If assistance were needed for a fire in Orange County, mutual aid would be lent by other agencies in Region 1 first, then other regions in California. The Los Angeles County Fire Department, Fullerton Fire Department, Orange County Fire Authority, and Placentia Fire and Life Safety Department provide mutual aid.

5.20.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project located in or near state responsibility areas or lands classified as very high FHSZs would normally have a significant effect on the environment if the project would:

W-1 Substantially impair an adopted emergency response plan or emergency evacuation plan.

W-2 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.

W-3 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.

W-4 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.

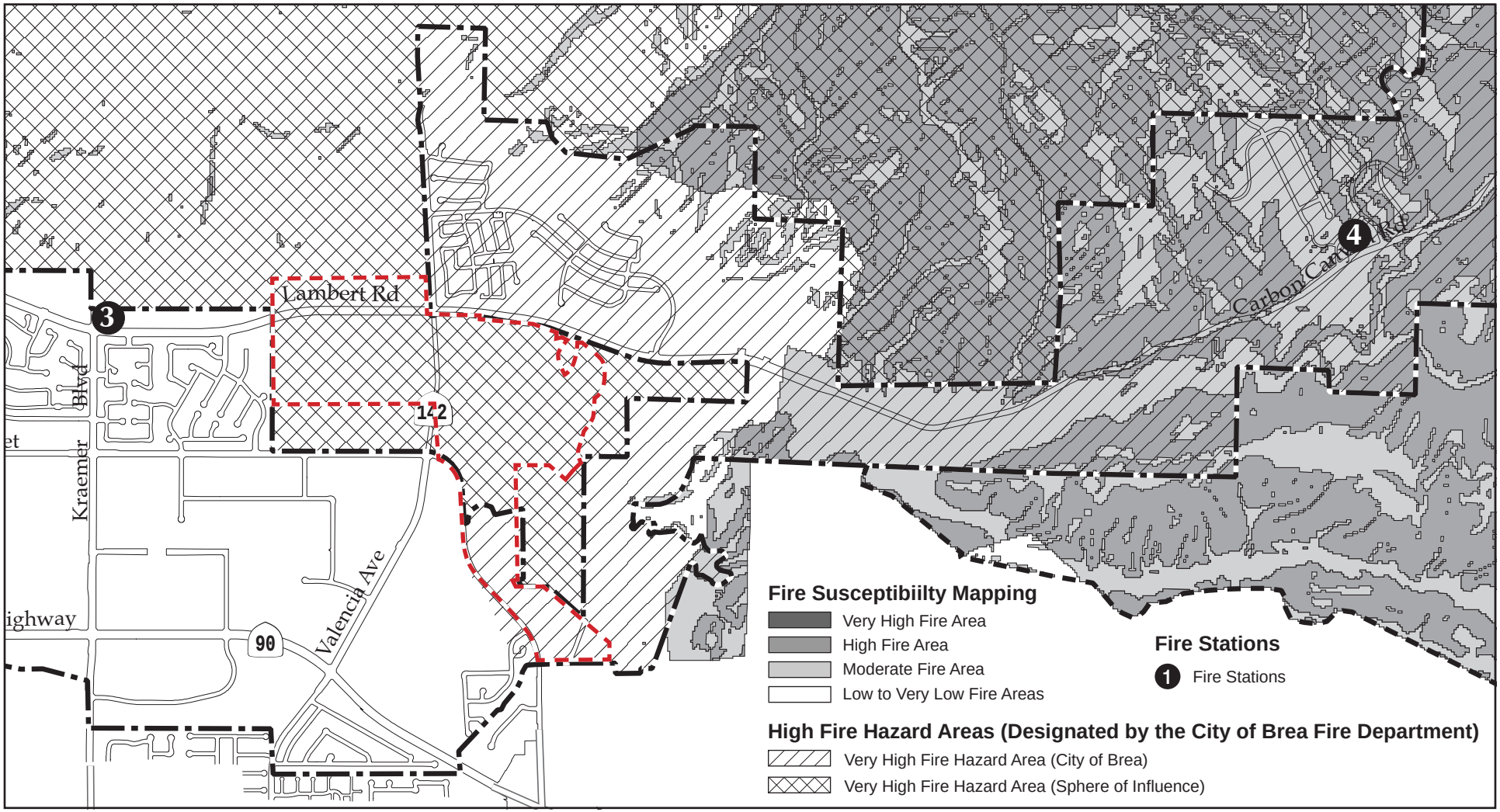
5.20.3 Plans, Programs, and Policies

Regulatory Requirements

PPP PS-1 New buildings are required to meet the fire regulations outlined in California Health and Safety Code (Sections 13000 et seq.).

Figure 5.20-1 - Very High Fire Hazard Areas

5. Environmental Analysis



Source: City of Brea, 2003

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WILDFIRE

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PPP PS-2 The project applicant is required to pay applicable development impact fees (e.g., dispatch impact fees, fire impact fees, fire service fees) or in-lieu fees as stipulated by the approved Development Agreement.

PPP PS-3 All development associated with the Brea 265 Specific Plan will be designed, built, and operated in accordance with the City of Brea's Municipal Code, Chapter 15.08, Building Code, and Chapter 16.04, Brea Fire Code.

PPP PS-4 As part of the project review process, the City of Brea Fire Department will require approval of Building Plan Check for Site Plan and Emergency Access. Additional design features to address the City of Brea Fire Department's requirements will be incorporated as conditions of approval for the Brea 265 Specific Plan.

PPP PS-5 The project applicant is required submit an overall Fire Master Plan at the time of the Brea 265 Specific Plan approval to be reviewed and approved by the City of Brea Fire Department as conditions of approval. The conditions of approval will also require that the project applicant submit separate fire plans at the time of tentative tract map review process for individual planning area to be reviewed and approved by the Brea Fire Department.

PPP PS-6 The project applicant is required to pay fees pursuant to the approved Development Agreement to provide two "Activated Snorkel Station–Heli-Hydrant" facilities as a means of immediate dipping sites for aerial firefighting aircraft tasked with responding to wildfires. The Activated Snorkel Station–Heli-Hydrant facilities will be located on a site owned by the project applicant and agreed to by the City of Brea.

PPP PS-7 The project applicant is required to reserve a one-acre graded pad site at the northwestern corner of Lambert Road and Valencia Avenue for the construction of a public safety/civic uses purposes by the City of Brea.

PPP PS-8 The Brea 265 Specific Plan will provide a minimum of 170 feet on-site of interface distance, as shown in Figure 5.20-2, *Fuel Modification Areas*, per the City of Brea's Very High Fire Hazard Severity Zone–Fuel Modification requirements as reviewed and approved by the Fire Code Official. Fuel modification areas will be maintained by the homeowners association.

PPP PS-9 All development associated with the Brea 265 Specific Plan will be designed, built, and operated in accordance with the Brea Fire Department's Very High Fire Hazard Severity Zone–Fuel Modification requirements.

PPP T-4 A site-specific construction worksite staging and traffic control plan will be prepared and submitted to the City of Brea for review and approval prior to the start of any construction work. This plan will include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons,

lights, warning beacons, temporary traffic signals, warning signs). The proposed project will be required to comply with the City-approved plan measures.

5.20.4 Environmental Impacts

The following impact analysis addresses the thresholds of significance; the applicable thresholds are identified in brackets after the impact statement.

Impact 5.20-1: Implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. [Threshold W-1]

The project site is in incorporated and unincorporated LRAs for very high FHSZs. Brea Fire provides emergency response for hazardous material incidents and administers the Fire Prevention and Emergency Preparedness Program. This program consists of the development and maintenance of the City's emergency response plan and emergency operations center. It addresses appropriate responses to major wildfires and other disasters, such as earthquakes, hazardous materials accidents, and dam failure. Program objectives include injury reduction and avoiding loss of life and property damage through effective management of emergency forces. The program describes how emergency response will be coordinated and how evacuation of residents will proceed. The proposed project would provide site-specific on- and off-site access and circulation for emergency vehicles and services during the construction and operational phases, and the site-specific access plans would comply with the existing Fire Prevention and Emergency Preparedness Program and would not impair any emergency evacuation plan (PPP PS-4 and PPP PS-5). Although the proposed project would increase the traffic volumes in the area, various roadway improvements would be provided to reduce roadway impacts within the City of Brea's jurisdiction to ensure that increased traffic does not delay traffic in the project area. Additionally, the design and construction of developments on the project site would comply with the CFC, as amended by Section 16.04 of the Brea Municipal Code. Therefore, implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP PS-4 and PPP PS-5.

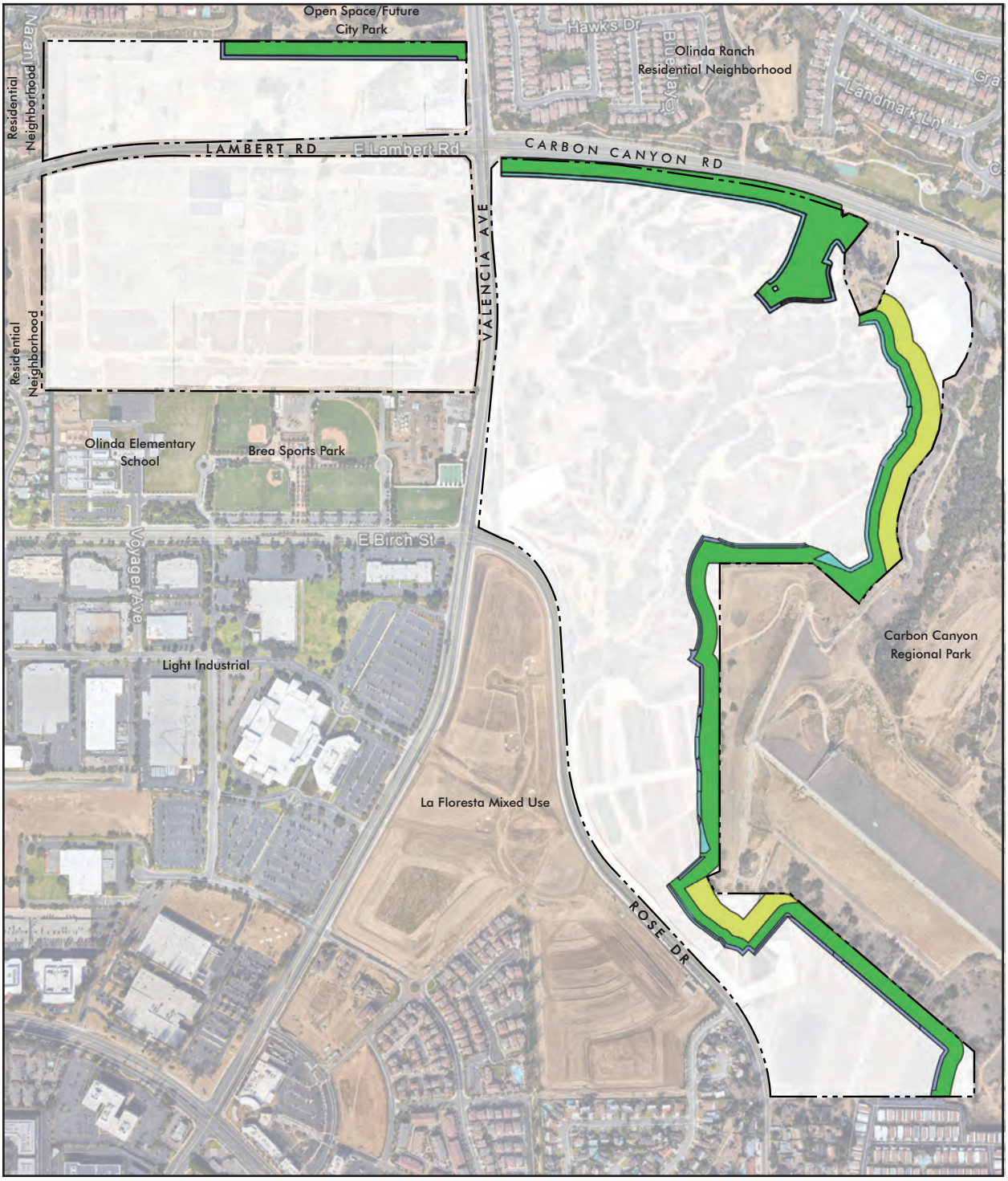
Impact 5.20-2: Project development would not exacerbate wildfire risks due to slope, prevailing winds, and other factors, and would not thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire [Threshold W-2]

A relatively large portion of Orange County is covered by natural (though modified) vegetation. Of these different vegetation types, coastal sage scrub, chaparral, and grasslands have the highest probability of ignition during the dry summer months and, under certain conditions, during the winter months. CAL FIRE maps show that the project site is on lands classified as very high FHSZ within an LRA.

Available information about wind direction for the project site indicates that the prevailing wind is toward the southwest and southeast (Visualcrossing.com 2021). Southwestern and southeastern winds would push a

Figure 5.20-2 - Fuel Modification Areas

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Zone A - Private Homeowner Maintained

Zone A - HOA Maintained

Zone B - Wet Zone (100% Removal of Undesirable Shrubs)

Zone C - Thinning Zone (50% Thinning Shrubs)

0 1,000

Scale (Feet)

Source: KTGY Group, 2021

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WILDFIRE

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wildfire in the very high FHSZ toward future development in the project site. Wildfire hazards in southern California are at their greatest when Santa Ana winds—hot, dry, westerly winds—are blowing, usually in autumn. Westerly winds could also push a wildfire in the VHFHSZ toward future development on the project site. However, the Specific Plan incorporates an extensive system of landscaped and natural open spaces along the eastern portion of the project site, adjacent to Carbon Canyon Regional Park. The project site would incorporate fuel modification zones as required by Brea Fire and OCFA. The fuel modification zones would provide noncombustible construction and plants and landscaping consistent with Brea's Very High Fire Hazard Severity Zone–Fuel Modification requirements (PPP PS-8 and PPP PS-9). The proposed fuel modification areas near Carbon Canyon Road and Carbon Canyon Regional Park are shown in Figure 5.20-2, *Fuel Modification Areas*. Additionally, much of the developed area would be impervious surfaces, most of which are nonflammable. Site vegetation would not exacerbate wildfire risk.

Elevations on-site range from 586 feet to 385 feet. The northeastern side of the project site can be characterized as moderate to locally steep hillside terrain with eroded canyons. Natural slopes in these canyon areas vary in slope ratio from approximately 1:1 to 5:1 (horizontal : vertical). The eastern side of the project site contains the highest elevations and slopes. The proposed landscaping within the open space areas and fire modification zones along the eastern side of the project site would contain plant material with deep root systems and/or fast-growing surface cover to stabilize the slope. All plant selections would comply with Brea Very High Fire Hazard Severity Zone–Fuel Modification requirements. Pursuant to Chapter 16.04, Brea Fire Code, fuel modification plans would be submitted and approved by the fire code official (PPP PS-3).

Therefore, the Specific Plan development would not exacerbate wildfire risks in the very high FHSZs upwind from or within the project site and thus would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

Level of Significance Before Mitigation: Less than significant impact with implementation of PPP PS-3, PPP PS-8, and PPP PS-9.

Impact 5.20-3: Project development would not 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 W-3]

Specific Plan development would not require construction of off-site infrastructure that may exacerbate fire risk or that may result in impacts to the environment. Adequate fuel modification zones would be provided as shown on Figure 5.20-2 to limit the spreading wildfire. All new on-site infrastructure would be in roadways and would not exacerbate wildfire risks. Once completed, all new improvements in the roadway would be underground, and the roadway would be returned to its current condition. During construction, standard conditions placed on encroachment permits that require notification of emergency services, paths of travel, and traffic management would ensure that the roadways remain available for emergency evacuation. Additionally, implementation of PPP PS-6 would improve the Brea Fire Department's ability to respond to wildfire calls by providing opportunities for the City to construct two Activated Snorkel Station–Heli-Hydrant facilities as dipping sites for aerial firefighting aircraft tasked with responding to wildfires in the City. It should

also be noted that Mitigation Measure GHG-1 requires all buildings to be electric, meaning that electricity is the only permanent source of energy for water-heating, mechanical and heating, ventilation, and air conditioning (HVAC) (i.e., space-heating and space cooling), cooking, and clothes-drying and there is no gas meter connection. This mitigation is anticipated to improve fire safety for homeowners during a public safety power shutoff (PSPS) event from high winds or other fire hazard conditions.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.20-4: Project development could expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire slope instability, or drainage changes. [Threshold W-4]

The proposed project would not expose people or structures to significant risks due to postfire slope instability or drainage changes. Specific Plan development would build out the project site and incorporate plant materials that would stabilize slopes, consistent with the City's Building Code (Municipal Code Chapter 15.08), Fire Code (Municipal Code Chapter 16.04), and Brea's Very High Fire Hazard Severity Zone–Fuel Modification requirements, as reviewed and approved by the Fire Code Official (PPP PS-3 and PPP PS-9). Project drainage and proposed drainage infrastructure are discussed further in Section 5.10, *Hydrology and Water Quality*, of this DEIR. As discussed in Chapter 5.10, the proposed project would result in a less than significant flooding impact to hydrology with the incorporation of Mitigation Measure HYD-2 and regulatory compliance measures. Mitigation Measure HYD-2 requires an Emergency Response Plan to be prepared prior to approval of any final subdivision map for the project area in the Carbon Canyon Dam inundation area. With respect to soil instability and landslides, Chapter 5.7, *Geology and Soils*, finds that the development under the proposed project would result in a less than significant impact with adherence to the California Building Code as adopted by the City of Brea (refer to PPP GEO-1 in Chapter 5.7).

Level of Significance Before Mitigation: Potentially significant impact.

5.20.5 Cumulative Impacts

The area considered for cumulative impacts are lands within Orange County that are categorized as SRA, federal responsibility area, or very high FHSZ in LRA. Projects in the region would exacerbate wildfire hazards due to factors such as slope and prevailing winds and could expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Some projects could extend infrastructure such as roads and overhead power lines through very high FHSZs and thus could exacerbate wildfire risk. Projects could also cause flooding or debris flows due to postfire slope instability.

However, all cumulative development would be mandated to comply with requirements in the CBC and CFC for building materials and construction methods for buildings in FHSZs and the requirements of Brea Fire, Fullerton Fire, OCFA, the CFC, and PRC Sections 4290 et seq. for fuel modification and defensible space. Furthermore, the proposed project and other development projects would be required to pay increased property taxes, charges for services, and special fees, and such payments would fund the necessary infrastructure and staffing to reduce cumulative wildfire hazard impacts. Cumulative wildfire hazard impacts

would be less than significant, and Specific Plan development impacts would not be cumulatively considerable.

5.20.6 Level of Significance Before Mitigation

Upon implementation of the plans, programs, and policies, the following impacts would be less than significant: 5.20-1, 5.20-2, and 5.20-3.

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.20-4** Implementation of the proposed project could expose people or structures to significant risks related to downstream flooding due to the project site's proximity to the Carbon Canyon Dam.

5.20.7 Mitigation Measures

Impact 5.20-4

HYD-2 Prior to approval of any final subdivision map for the Brea 265 Specific Plan, the project applicant shall submit an emergency response plan (Plan) that meets the approval of the Brea Fire Department. The Plan shall provide emergency response protocols, and for the final subdivision map east of Rose Drive within the Carbon Canyon Dam inundation area, the Plan shall also demonstrate compliance with the dam failure inundation buyer notification provisions of state law.

5.20.8 Level of Significance After Mitigation

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

5.20.9 References

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5. Environmental Analysis
WILDFIRE

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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 the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

- Air Quality
- Greenhouse Gas Emissions

Air Quality

Impact 5.3-2

Operation of the proposed project would generate long-term emissions of volatile organic compounds (VOC) in exceedance of South Coast Air Quality Management District (South Coast AQMD) threshold criteria. Though implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to reducing project-related long-term emissions of VOC, they may not provide enough of a reduction to reduce project-related VOC emissions to below the South Coast AQMD regional significance threshold. Emissions of VOC that exceed the South Coast AQMD regional significance threshold would contribute to the ozone nonattainment designations of the South Coast Air Basin (SoCAB) and cumulatively contribute to health impacts.

The incremental effect of the project on health outcomes in the SoCAB is speculative (see "Health Outcomes Associated with the Regional Significance Thresholds" in Section 5.3.2.1, *South Coast Air Quality Management District Thresholds*). According to the South Coast AQMD, exceedance of the regional significance thresholds cannot be used to correlate a project to quantifiable health impacts unless emissions are sufficiently high to use a regional model (see Appendix C6). Because the ambient air quality standards (AAQS) are applied at the regional level, a regional-scale air quality model is necessary to determine the concentrations of the criteria air pollutants in the SoCAB and whether they exceed the AAQS.

In general, regional scale air quality modeling efforts are conducted by air districts because they are the agencies that oversee compliance of the air basins to the AAQS. Regional air quality models currently available to air districts typically attempt to accounts for all emissions sources within an air basin. Due to the nature of the available regional model, the purpose of the AAQS, the AAQS being based on concentrations instead of mass emissions, and the complexity in correlating concentration levels with the amount of mass emissions generated, a large change in emissions would be needed to provide observable and meaningful results, as discussed in Section 5.3, *Air Quality*.

6. Significant Unavoidable Adverse Impacts

Overall, though modeling VOC exceedance using regional-scale modeling would not provide a reasonable degree of scientific certainty, and therefore would not provide reliable, credible information of value to decision-makers or the public regarding effects on health, air districts develop region-specific thresholds of significance based on existing attainment status for the California and National AAQS in the air basin (see Table 5.3-3, *Attainment Status of Criteria Pollutants in the South Coast Area Air Basin*). The ambient air quality standards were developed based on scientific evidence related to the acceptable pollutant concentrations above which human health may be adversely impacted. These concentrations are the cumulative effect of all pollutant sources in the air basin. South Coast AQMD considers projects with emissions below the thresholds of significance to have a minor or negligible impact on the regional cumulative emission concentrations that exceed the ambient air quality standards. Projects that exceed an applicable threshold could contribute to the continued nonattainment designation of a region or potentially degrade a region from attainment to nonattainment, resulting in acute or chronic respiratory and cardiovascular illness from exposure to concentrations of criteria air pollutants above what US Environmental Protection Agency and California Air Resources Board consider safe. As identified above, the proposed project would generate long-term VOC emissions that exceed the South Coast AQMD regional significance threshold, which contribute to the formation of ozone. Therefore, Impact 5.3-2 is considered a significant and unavoidable impact.

Impact 5.3-6

The long-term emissions generated by the proposed project would contribute to an increase in frequency or severity of air quality violations in the South Coast Air Basin and would conflict with the assumptions of the applicable Air Quality Management Plan. Incorporation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing VOC emissions from operation of the proposed project, to the extent feasible. However, it is anticipated that project-related operation-phase activities would still result in VOC emissions exceeding the South Coast AQMD regional significance threshold. Thus, the proposed project would continue to be inconsistent with the Air Quality Management Plan. Therefore, Impact 5.3-6 would be significant and unavoidable.

Greenhouse Gas Emissions

Impact 5.8-1

Buildout of the proposed project would generate a substantial increase in GHG emissions compared to existing conditions and would have a significant impact on the environment. As shown in Table 5.8-8, *Project GHG Emissions Inventory With Mitigation*, the proposed project is estimated to generate 12,152 $MTCO_2e$/yr of GHG emissions, and implementation of Mitigation Measures GHG-1 and GHG-2 would contribute to minimizing emissions. As shown in Table 5.8-8, implementation of measures *d* and *f* of Mitigation Measure GHG-1 would provide a net reduction in emissions of 742 $MTCO_2e$/yr and reduce overall project emissions to 12,152 $MTCO_2e$/yr. Implementation of the other measures under Mitigation Measure GHG-1 would also contribute to reducing GHG emissions. For example, installation of battery storage for the proposed homes would further enable homes to rely on more renewable electricity to meet their energy needs and rely less on grid electricity. An all-electric home paired with both a PV and battery storage system could reduce GHG emissions by 76 to 77 percent compared to standard mixed-fuel homes designed and built to the 2019

Building Energy Efficiency Standards (Frontier 2019). However, even with the additional reductions associated with Mitigation Measure GHG-1 and Mitigation Measure GHG-2, it is anticipated that the proposed project would still exceed the bright-line threshold of 3,000 $MTCO_2e/yr$. Therefore, Impact GHG-1 would be significant and unavoidable.

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 sec. 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 alterative.
- 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 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. Organize the land plan to facilitate the provision of proposed land uses and amenities.

2. Integrate a comprehensive walking and biking trail system that provides physical and visual connections to enhance walkability, linking neighborhoods to key amenities and open space areas within Brea 265 and to the existing trails in the greater Brea community, including Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park.

3. Enhance public benefits by incorporating a variety of parks, paseos, parkways, and open space features that meet the recreational needs of the residents, enhance pedestrian orientation, and contribute to community aesthetics.

4. Provide a housing mix ranging from conventional single-family homes and detached cluster homes to townhomes and apartments, including workforce and affordable housing units.

5. Incorporate development standards specifically crafted for the latest residential design concepts and neighborhood designs that are popular with homebuyers.

6. Provide flexibility in plan implementation to allow for changes in future market conditions.

7. Use the Specific Plan as a tool to implement the City's affordable housing requirements and the State's Density Bonus Law.

8. Establish a distinctive community character through place-making elements that embrace and respect the site's oil industry history and special physical attributes.

9. Incorporate sustainable design and development approaches, including walkable communities, water quality features, and water- and energy-efficient landscape and building design. Encourage the use of sustainable building materials, where feasible.

10. Ensure appropriate phasing and financing for community facilities, including circulation and streetscape improvements; water, sewer, and drainage facilities; and parks and recreational facilities.

11. Provide the fire management plan to reduce the threat of wildfire and create a fire-resistant buffer between homes and the adjacent open space areas of Carbon Canyon Regional Park.

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 Reduced Density Alternatives

Until January 1, 2025, SB 330 prohibits a county or city (including through local initiative or referendum power) from enacting a development policy, standard, or condition, that would have the effect of changing the land use designation or zoning of a parcel or parcels of property to a less intensive use or reducing the intensity of land use within an existing zoning district below what was allowed under the general plan or specific plan land use designation and zoning ordinances of the county or city in effect on January 1, 2018.

Additionally, Public Resources Code Section 21159.26. states:

> With respect to a project that includes a housing development, a public agency may not reduce the proposed number of housing units as a mitigation measure or *project alternative* for a particular significant effect on the environment if it determines that there is another feasible specific mitigation measure or project alternative that would provide a comparable level of mitigation. This section does not affect any other requirement regarding the residential density of that project. [emphasis added]

Of the 262.1-acre project site, approximately 219.1 acres is in unincorporated Orange County. Under the existing Orange County Transportation Analysis Model (OCTAM) based on the County of Orange General Plan land use designations for the project site, up to 615 units could be developed on the project site. Therefore, a reduced density alternative that proposes less than 615 units would not comply with SB 330 and therefore was considered and rejected.

7.2.2 Alternative Site

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. 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

sec. 15126.6[f][2][a]). Key factors in evaluating the feasibility of potential offsite locations for EIR project alternatives include: 1) site suitability; 2) economic viability; 3) availability of infrastructure; 4) general plan consistency; 4) other plans or regulatory limitations; 5) jurisdictional boundaries (projects with a regionally significant impact should consider the regional context); and 6) 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 sec. 15126.6[f][1]).

In general, any development of the size and type proposed by the project would have substantially the same impacts on air quality, greenhouse gases, energy, land use/planning, noise, population/housing, public services, recreation, transportation, and utilities/service systems. Without a site-specific analysis, impacts on aesthetics, agricultural resources, biological resources, cultural resources, geology/soils, hazards and hazardous materials, hydrology/water quality, mineral resources, tribal cultural resources, and wildfire cannot be evaluated.

In reviewing possible alternative sites, the project applicant does own approximately 321 acres of vacant land in Orange County near the intersection of Tonner Canyon Road and Brea Boulevard/Brea Canyon Road. This alternative site is in unincorporated Orange County but is within the City of Brea's sphere of influence. The County of Orange General Plan designates this site as "1B" Suburban Residential, and it is currently zoned A-1 "O" General Agricultural District/Oil Production District. Similar to the proposed project, the alternative site could be rezoned to permit the construction of up to 1,100 residential units. Also similar to the proposed project, the alternative site is currently used for oil production. However, the alternative site has more substantial topography and is more visible because of its higher elevations. The proposed project was found to have a less than significant impact without mitigation measures to the following environmental topics: aesthetics, agricultural and forestry resources, energy, land use and planning, mineral resources, operational noise, population and housing, recreation, and transportation. The proposed project was found less than significant with mitigation to the following environmental topics: construction air quality, biological resources, cultural resources, geology and soils (paleontological resources), hazards and hazardous materials, hydrology and water quality, construction noise, public services, tribal cultural resources, utilities and service systems, and wildfire. The proposed project was found to result in significant and unavoidable impacts to operational air quality and greenhouse gas (GHG) emissions. Development of similar size and number of units in the city would likely result in similar environmental impacts as the proposed project, including significant operational air quality and GHG emissions impacts. Therefore, development of the alternative site would not avoid or substantially lessen the effects of the proposed project and is therefore rejected from further consideration.

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/Existing County of Orange General Plan Development Alternative
- No Project/Existing City of Brea General Plan Development Alternative
- Higher Density Development Alternative

CEQA requires the alternatives analysis to include a No Project Alternative in order to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (CEQA Guidelines sec. 15126.6[e][1]). According to CEQA Guidelines Section 15126.6(e)(2), the No Project Alternative "shall discuss the existing conditions at the time the notice of preparation is published…as well as what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved, based on current plans, and consistent with available infrastructure and community services." This chapter analyzes in detail two No Project alternatives.

An EIR must identify an "environmentally superior" alternative, and where the No Project Alternative is identified as environmentally superior, the EIR is 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 the 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. The proposed project was found to have a less than significant impact without mitigation measures to the following environmental topics: aesthetics, agricultural and forestry resources, energy, geology and soils (except for paleontological resources), land use and planning, mineral resources, operational noise, population and housing, recreation, and transportation. The proposed project was found less than significant with mitigation to the following environmental topics: construction air quality, biological resources, cultural resources, geology and soils (paleontological resources), hazards and hazardous materials, hydrology and water quality, construction noise, public services, tribal cultural resources, utilities and service systems, and wildfire. The proposed project was found to result in significant and unavoidable impacts to operational air quality and GHG emissions. Section 7.7 identifies the Environmentally Superior Alternative. The preferred land use alternative (proposed project) is analyzed in detail in Chapter 5 of this DEIR.

7.3.1 Alternatives Comparison

The following statistical analysis provides a summary of general socioeconomic buildout projections determined by the three land use alternatives, including the proposed project. It is important to note that these are not growth projections. That is, they do not anticipate what is likely to occur by a certain time horizon, but provide a buildout scenario that would only occur if all the areas of the city were to develop to the probable capacities yielded by the land use alternatives. The following statistics were developed as a tool to understand better the difference between the alternatives analyzed in the DEIR. Table 7-1 identifies citywide information regarding dwelling unit, population, and employment projections and provides the jobs-to-housing ratio for each of the alternatives.

Table 7-1 Buildout Statistical Summary

	Proposed Project	No Project/Existing County of Orange General Plan Development Alternative	No Project/Existing City of Brea General Plan Development Alternative	Higher Density Development Alternative
Dwelling Units	1,100	615	727	1,100
Density	4.2 DU/ac	2.3 DU/ac	2.8 DU/ac	6.8 DU/ac
Population	3,102	1,735	2,050	3,102
Employment	0	0	0	0
Jobs-to-Housing Ratio	2.80	2.88	2.86	2.80

7.4 NO PROJECT/EXISTING COUNTY OF ORANGE GENERAL PLAN DEVELOPMENT ALTERNATIVE

Under this alternative, a total of 615 single-family detached units would be developed onsite. The 615 detached single-family units are from the Orange County Transportation Analysis Model (OCTAM) based on the County of Orange General Plan land use designations for the project site. Approximately 16.4 percent (43 acres) of the project site is in the City of Brea, and the remaining 83.6 percent (219.1 acres) is in unincorporated Orange County. Therefore, this alternative assumes that approximately 16.4 percent or 101 units of the 615 single family units would be constructed in the City of Brea, and 514 units would be constructed in unincorporated Orange County. This alternative would generate 5,800 daily trips, reducing the project-related trips from 9,351 trips under the proposed project—a reduction of 3,551 trips or approximately 38 percent. Under this alternative, no attached single-family units or townhome units would be constructed, and 11 affordable housing units would be constructed per the City's Affordable Housing Ordinance, a reduction from the proposed 76 affordable housing units under the proposed project. Under this alternative, the overall development density would be reduced from approximately 4.2 units per acre to 2.3 units per acre. Though more open space area could be provided, no sports park would be developed. Under this alternative, discretionary actions involving Specific Plan, general plan amendment, rezoning, development agreement, and annexation would not be required.

7.4.1 Aesthetics

This alternative results in development of 615 single-family detached units, 485 dwelling units fewer than the proposed 1,100 housing mix ranging from single family homes and detached cluster homes to townhomes and apartments, including affordable housing units. This represents a 44 percent decrease in dwelling units compared to the proposed project. This decrease in dwelling units would allow this alternative to dedicate more land to open space. This alternative would be expected to comply with all applicable design and development regulations and guidelines of the County of Orange and the City of Brea, without modifications allowed by the proposed project under the affordable housing incentives. Therefore, the maximum building height is not expected to exceed 35 feet, instead of 50 feet under the proposed project, and would also have greater front and side setbacks. Compared to the proposed project, this alternative would be less dense with less mass and height. Therefore, it is anticipated that there would be more opportunities for visual relief. This alternative

would have less aesthetic impacts compared to the proposed project. Aesthetics is not a significant and unavoidable impact of the proposed project.

7.4.2 Agriculture and Forestry Resources

As with the proposed project, development under this alternative would remove the existing agricultural uses on site. Impacts of the proposed project on agricultural and forestry resources were found to be less than significant prior to mitigation. This alternative's impact to agriculture and forestry resources would be similar to the proposed project. Agriculture and forestry resources are not a significant and unavoidable impact of the proposed project.

7.4.3 Air Quality

This alternative would result in a decrease of 485 dwelling units compared to the proposed 1,100 units under the proposed project for a total of 615 dwelling units. This alternative's dwelling units could be arranged in a manner that decreases the amount of grading required. In addition, the decrease in the amount of dwelling units would also reduce the amount of construction needed. Both the reduced grading and construction would reduce construction-related air quality impacts compared to the proposed project. A reduction in the number of units would result in less operation-related regional emissions, including transportation, area, and energy source emissions. During operation, this alternative would be expected to generate approximately 5,800 daily trips, which represents an approximately 38 percent reduction compared to the proposed project. This alternative would therefore result in a decrease in short-term construction impacts and long-term operational air quality impacts compared to the proposed project. However, the reduction in units would not be substantial enough to eliminate significant operational air quality impacts. Construction air quality is not a significant and unavoidable impact of the proposed project, but operational air quality is a significant and unavoidable impact of the proposed project.

7.4.4 Biological Resources

The project site contains sensitive flora, fauna, and habitat. The project site contains four drainages (jurisdictional waters) and riparian areas. In addition, the project site is in an area identified as critical habitat for the coastal California gnatcatcher. Similar to the proposed project, development of this alternative would develop the project site and would result in impacts to existing biological resources on site, and require similar permits and mitigation measures as the proposed project. However, development under this alternative could preserve a larger open space area compared to the proposed project due to less dense development, providing more opportunities to preserve sensitive vegetation and habitats onsite rather than providing offsite mitigation. Therefore, this alternative would slightly reduce impacts related to biological resources. Biological resources are not a significant and unavoidable impact of the proposed project.

7.4.5 Cultural Resources

This alternative would redevelop and disturb a smaller area of the project site compared to the proposed project. Therefore, the area of soil disturbance would be smaller than that of the proposed project. However,

similar to the proposed project, a mitigation measure that requires monitoring during certain grading activities would still be necessary. Compared to the proposed project, this alternative would reduce impacts to cultural resources because of the smaller development area. Cultural resources are not a significant and unavoidable impact of the proposed project.

7.4.6 Energy

Under this alternative, the number of residential units would be reduced to 615 dwelling units from the proposed 1,100 units. This alternative is anticipated to result in a reduction in energy impacts compared to the proposed project. Energy is not a significant and unavoidable impact of the proposed project.

7.4.7 Geology and Soils

This alternative would redevelop and disturb a smaller portion of the project site compared to the proposed project. This alternative is expected to preserve more of the natural slopes on site. However, as with the proposed project, new buildings and graded areas would be required to comply with the most recent building and seismic codes and regulations. Because this alternative would reduce the number of units to be constructed and areas to be graded, this alternative would reduce impacts related to geology and soils. Geology and soils are not a significant and unavoidable impact of the proposed project.

This alternative would reduce the area to be graded and excavated, although it would require a similar mitigation measure to reduce potential paleontological resources impacts by requiring monitoring during ground-disturbing activities that occur in deposits that could potentially contain paleontological resources. Because the area of disturbance would be reduced, the potential for discovering and damaging paleontological resources would also be reduced. Paleontological resources is not a significant and unavoidable impact of the proposed project.

7.4.8 Greenhouse Gas Emissions

This alternative would contribute to global climate change through direct emissions of GHG from onsite area sources and vehicle trips generated. However, a decrease in the number of units and building area would likely result in reduced construction-related trips. During long-term operation, vehicle trips, VMT, area sources, and off-site energy production would be reduced when compared to the proposed project. GHG emissions impacts of this alternative would be less than the proposed project. However, the reduction in units would not be substantial enough to eliminate significant GHG emissions impacts. GHG emissions are a significant and unavoidable impact of the proposed project.

7.4.9 Hazards and Hazardous Materials

The project site has historically contained and currently contains oil production activities and agriculture activities. All hazardous material concerns and remediation programs under this alternative would be identical to those encountered under the proposed project. As a result, impacts related to hazards and hazardous materials would be the same as the proposed project. Hazards and hazardous materials is not a significant and unavoidable impact of the proposed project.

7.4.10 Hydrology and Water Quality

This alternative would redevelop and disturb a smaller portion of the project site and preserve more land as open space. Therefore, the area of soil disturbance would be smaller than the proposed project, and hydrology and water quality impacts during construction would be less than the proposed project. And as with the proposed project, this alternative would be required to be graded in accordance with the NPDES Construction General Permit requirements and incorporate appropriate best management practices. Additionally, full buildout of this alternative would result in more pervious surfaces, since a larger portion of the project site would be maintained as open space. The increase in pervious surfaces would allow more rainwater to percolate into the ground. This alternative would reduce impacts related to hydrology and water quality compared to the proposed project. Nevertheless, similar to the proposed project, this alternative would likely result in housing development in the Carbon Canyon Dam inundation area and would require the preparation and submittal of an emergency response plan to the Brea Fire Services Department. Hydrology and water quality is not a significant and unavoidable impact of the proposed project.

7.4.11 Land Use and Planning

Under this alternative, discretionary actions involving Specific Plan, rezoning, and affordable housing incentives would not be required. This alternative would be consistent with the existing zoning and land use designation for the project site. This alternative would also reduce project-related trips by approximately 38 percent, reducing potential impacts to local and regional transportation systems, including Caltrans facilities. Therefore, this alternative would serve better to attain the RTP/SCS goal of preserving and ensuring a sustainable regional transportation system than the proposed project, which requires changes in land use designations. This alternative would reduce impacts related to land use and planning compared to the proposed project. Land use and planning is not a significant and unavoidable impact of the proposed project.

7.4.12 Mineral Resources

The project site is in a Mineral Resource Zone (MRZ) 1 and MRZ 3. Development under this alternative would result in similar impacts to mineral resources as the proposed project. Similar to the proposed project, development of this alternative would not deplete or modify the availability of a known mineral resources. This alternative would have similar physical environmental impacts to mineral resources compared to the proposed project. Mineral resources is not a significant and unavoidable impact for the proposed project.

7.4.13 Noise

A reduction in building area would decrease the project-related construction noise impacts. This alternative would still be anticipated to implement the identified mitigation measures to ensure that construction-related noise levels are less than significant. However, the construction duration would be shortened, and the related construction noise would be reduced. The reduction in number of units would also decrease residential noise and traffic noise, thus reducing the operational noise impact compared to the proposed project. Noise related to the sports park would also be eliminated. This alternative would reduce impacts related to both construction and operational noise. Noise is not a significant and unavoidable impact of the proposed project.

7.4.14 Population and Housing

As shown in Table 7-1, the buildout of this alternative would result in 615 dwelling units, which would be expected to generate 1,735 new residents. Compared to the proposed project, this alternative results in 485 fewer dwelling units and 1,367 fewer residents than the proposed project (a 44 percent decrease for both). In addition, the jobs-to-housing ratio for this alternative would be 2.88 compared to the project's 2.80. Under this alternative, no affordable housing units would be constructed. The reduction of housing opportunities compared to the proposed project would worsen the jobs-to-housing ratio. Therefore, this alternative would have greater population and housing impacts compared to the proposed project. Population and housing impact is not a significant and unavoidable impact of the proposed project.

7.4.15 Public Services

This alternative would reduce the number of units developed on the project site, and therefore would generate less public services demands compared to the proposed project. However, the proposed project would provide special funding to improve fire safety facilities and training and would also provide locations for future fire safety and public safety/civic uses, as stipulated in the Development Agreement. Under this alternative, no additional special public safety facilities and sites would be provided to reduce fire service impacts to a less than significant level. Therefore, this alternative would result in greater fire services impact than the proposed project. Similar to the proposed project, a mitigation measure that requires Crime Prevention Through Environmental Design principles to reduce police services impact and a mitigation measure to offset its fair-share of the costs of providing additional library resources would still be necessary for this alternative. This alternative would decrease impacts related to police, school, and library services, and increase fire protection impacts. Public services are not a significant and unavoidable impact of the proposed project.

7.4.16 Recreation

This alternative would reduce the number of units developed on the project site, and therefore would reduce the number of residents at the project site. Similar to the proposed project, this alternative would be required to comply with Brea Municipal Code section 18.64.080, which requires the provision of park and recreational facilities through land dedication, installation of improvements, payment of in-lieu fee thereof, or a combination. Given the reduction of dwelling units on-site and residents, this alternative would generate a reduced park and recreational demand compared to the proposed project. However, the 13-acre sports park with various recreational amenities would not be provided under this alternative. Therefore, this alternative would have similar environmental impacts on recreation as the proposed project. Recreation is not a significant and unavoidable impact of the proposed project.

7.4.17 Transportation

Under this alternative, construction-related traffic would be reduced since there would be a reduction in residential units. This alternative would also reduce operation-related trips, generating 5,800 daily trips instead of 9,351 trips under the proposed project—a reduction of approximately 38 percent. Therefore, this alternative would reduce roadway intersection and segment queuing impacts on local and Caltrans facilities. And as with

the proposed project, with reduced daily trips but within the same traffic analysis zones, this alternative is anticipated to result in VMT per service population that is less than the City's threshold. Because this alternative would decrease daily and peak hour trips in area roadway system, this alternative would have less traffic impacts in comparison with the proposed project. However, as with the proposed project, this alternative would also be required to contribute its fair share pursuant to the City's AB 1600 Transportation Improvement Nexus Program (Ordinance 996). This alternative would reduce impacts related to transportation compared to the proposed project. Transportation impacts are not a significant and unavoidable impacts of the proposed project.

7.4.18 Tribal Cultural Resources

This alternative would develop a smaller portion of the project site compared to the proposed project and provide more open space. As such, development under this alternative would require less earthwork and ground-disturbing activities. Due to the earthwork activities, potential impacts still exist to subsurface tribal cultural resources. Similar to the proposed project, this alternative would need a mitigation measure requiring the retention of a qualified Native American monitor during construction. Given the smaller number of dwelling units, this alternative would reduce impacts relating to tribal cultural resources compared to the proposed project. Tribal cultural resources are not a significant and unavoidable impact of the proposed project.

7.4.19 Utilities and Service Systems

This alternative would have 485 fewer dwelling units than the proposed project. Therefore, the alternative would generate less wastewater and solid waste and less demand for water, electricity, gas, and telecommunication compared to the proposed project. Given the smaller number of dwelling units, this alternative would have more impervious surfaces and is therefore likely to result in reduced stormwater volume compared to the proposed project. This alternative would reduce overall utilities and service systems demands compared to the proposed project. Utilities and service systems are not a significant and unavoidable impact of the proposed project.

7.4.20 Wildfire

The project site is in a very high fire hazard severity zone (FHSZ) for incorporated local responsibility area (LRA) of the City of Brea and the Orange County Fire Authority's (OCFA) unincorporated LRA. This alternative would place 615 dwelling units on-site instead of 1,100 units. As with the proposed project, development under this alternative would be required to comply with the California Fire Code (CFC), and the City of Brea's and OCFA's standards for fire protection, including providing fuel modification zones and implementing noncombustible construction and plants and landscaping. This alternative would provide more opportunities for open space, which could be prone to wildfire risks, compared to more dense development with more impervious and nonflammable surfaces. Therefore, this alternative would have greater impacts related to wildfire. Wildfire is not a significant and unavoidable impact of the proposed project.

7.4.21 Conclusion

This alternative would lessen environmental impacts for Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, GHG Emissions, Hydrology and Water Quality, Land Use and Planning, Noise, Public Services, Transportation, Tribal Cultural Resources, and Utilities and Service Systems. This alternative would be environmentally neutral for Agriculture and Forestry Resources, Hazards and Hazardous Materials, Mineral Resources, and Recreation. This alternative would worsen environmental impacts for Population and Housing and Wildfire. All mitigation measures identified for the proposed project would still be required. For these reasons, this alternative is considered environmentally superior to the proposed project.

7.5 NO PROJECT/EXISTING CITY OF BREA GENERAL PLAN DEVELOPMENT ALTERNATIVE

Under this alternative, the project site would be developed under the existing Hillside Residential and Low Density Residential land use designations. Pursuant to the General Plan's slope density formula and Brea Municipal Code Section 20.206.060 and Table 20.206.060.B for Hillside Residential, 160 dwelling units are allowed in the 166.2 acres of Hillside Residential designation, a density of 0.96 dwelling unit per acre. And the Low Density Residential land use designation allows a maximum overall density of 6 dwelling units per acre, resulting in a total of 567 units in the 94.5-acre portion of the project site. This alternative does not include the density increase allowed under Section 20.206.060.C.3 or the state density bonus. This alternative would have an overall average density of 2.8 dwelling units per acre. Therefore, under the City's General Plan land use designation, a total of 727 single family detached units would be allowed. This alternative would include 10 percent affordable housing units under the City's affordable housing ordinance, and therefore include 73 affordable housing units. Under this alternative, more open space area would be preserved. However, no sports park would be developed. This alternative would generate approximately 6,856 daily trips, reducing the project-related 9,351 trips by 2,495 trips or approximately 26.7 percent. Under this alternative, discretionary actions involving precise development review, a hillside development permit, and annexation would be required.

7.5.1 Aesthetics

This alternative results in development of 727 single-family detached units, 373 dwelling units fewer than the proposed 1,100 housing mix ranging from single family homes and detached cluster homes to townhomes and apartments, including affordable housing units. This represents a 34 percent decrease in dwelling units compared to the proposed project. This decrease in dwelling units and compliance with the Hillside Residential ordinance would preserve more land as open space. This alternative would be expected to comply with all applicable design and development regulations and guidelines in the City's Municipal Code and General Plan. Therefore, the maximum building height is not expected to exceed 35 feet, instead of 50 feet under the proposed project, and would also have greater front and side setbacks. Compared to the proposed project, this alternative would be less dense with less mass and height. Therefore, it is anticipated that there would be more opportunities for visual relief. This alternative would have less aesthetic impacts compared to the proposed project. Aesthetics is not a significant and unavoidable impact of the proposed project.

7.5.2 Agriculture and Forestry Resources

As with the proposed project, development under this alternative would remove the existing agricultural uses on-site. Impacts of the proposed project on agricultural and forestry resources were found to be less than significant prior to mitigation. This alternative's impact to agriculture and forestry resources would be similar to the proposed project. Agriculture and forestry resources are not a significant and unavoidable impact of the proposed project.

7.5.3 Air Quality

This alternative would result in a decrease of 373 dwelling units compared to the proposed project, for a total of 727 dwelling units. This alternative's dwelling units could be arranged in a manner that decreases the amount of grading required. In addition, the decrease in the number of dwelling units would also reduce the amount of construction needed. Both the reduced grading and construction would reduce construction-related air quality impacts compared to the proposed project. During operation, this alternative would be expected to generate approximately 6,863 daily trips, which represents an approximately 26.5 percent reduction compared to the proposed project. This alternative would therefore result in a decrease in short-term construction impacts and long-term operational air quality impacts compared to the proposed project. However, the reduction in units would not be substantial enough to eliminate significant operational air quality impacts. Construction air quality is not a significant and unavoidable impact of the proposed project, but operational air quality is a significant and unavoidable impact of the proposed project.

7.5.4 Biological Resources

The project site contains sensitive flora, fauna, and habitat. The project site contains four drainages (jurisdictional waters) and riparian areas. In addition, the project site is in an area identified as critical habitat for the coastal California gnatcatcher. Similar to the proposed project, development of this alternative would develop the project site and would result in impacts to existing biological resources on-site and require similar permits and mitigation measures as the proposed project. This alternative would reduce the number of dwelling units by approximately 34 percent and could potentially preserve a slightly larger amount of open space compared to the proposed project. Therefore, impacts to biological resources under this alternative would be less than the proposed project. Biological resources are not a significant and unavoidable impact of the proposed project.

7.5.5 Cultural Resources

This alternative would redevelop and disturb a smaller area of the project site compared to the proposed project. However, similar to the proposed project, a mitigation measure that requires monitoring during certain grading activities would still be necessary. Compared to the proposed project, this alternative would reduce impacts to cultural resources because of the reduced number of dwelling units and smaller development area. Cultural resources are not a significant and unavoidable impact of the proposed project.

7.5.6 Energy

Under this alternative, the number of residential units would be reduced to 727 dwelling units from 1,100 units, a 34 percent reduction. Therefore, this alternative is anticipated to result in a reduction in energy impacts compared to the proposed project. Energy is not a significant and unavoidable impact of the proposed project.

7.5.7 Geology and Soils

This alternative would redevelop and disturb a smaller portion of the project site compared to the proposed project. This alternative is expected to preserve more of the natural slopes on-site. However, as with the proposed project, new buildings and graded areas would be required to comply with the most recent building and seismic codes and regulations. Because this alternative would reduce the number of units to be constructed and areas to be graded, this alternative would reduce impacts related to geology and soils. Geology and soils are not a significant and unavoidable impact of the proposed project.

This alternative would reduce the area to be graded and excavated, although it would require a similar mitigation measure to reduce potential impacts to paleontological resources by requiring monitoring during ground-disturbing activities that occur in deposits that could potentially contain paleontological resources. Because the area of disturbance would be reduced, the potential for discovering and damaging paleontological resources would also be reduced. Paleontological resources is not a significant and unavoidable impact of the proposed project.

7.5.8 Greenhouse Gas Emissions

This alternative would contribute to global climate change through direct emissions of GHG from on-site area sources and vehicle trips generated. However, a decrease in the number of units and building area would likely result in reduced construction-related trips. During long-term operation, vehicle trips, VMT, and off-site energy production would be reduced when compared to the proposed project. GHG emissions impacts of this alternative would be less than the proposed project. However, the reduction in units would not be substantial enough to eliminate significant GHG emissions impacts. GHG emissions are not a significant and unavoidable impact of the proposed project.

7.5.9 Hazards and Hazardous Materials

The project site has historically contained and currently contains oil production activities and agriculture activities. All hazardous material concerns and remediation programs under this alternative would be identical to those encountered under the proposed project. As a result, impacts related to hazards and hazardous materials would be the same as the proposed project. Hazards and hazardous materials is not a significant and unavoidable impact of the proposed project.

7.5.10 Hydrology and Water Quality

This alternative would redevelop and disturb a smaller portion of the project site and preserve more land as open space. Because the area of soil disturbance would be smaller than the proposed project, hydrology and

water quality impacts during construction would be less than the proposed project. And as with the proposed project, this alternative would be required to be graded in accordance with the NPDES Construction General Permit requirements and incorporate appropriate best management practices. Additionally, full buildout of this alternative would result in more pervious surfaces, since a larger portion of the project site would be maintained as open space. The increase in pervious surfaces would allow more rainwater to percolate into the ground. This alternative would reduce impacts related to hydrology and water quality compared to the proposed project. Nevertheless, similar to the proposed project, this alternative would likely result in housing development in the Carbon Canyon Dam inundation area, and would require the preparation and submittal of an emergency response plan to the Brea Fire Services Department. Hydrology and water quality is not a significant and unavoidable impact of the proposed project.

7.5.11 Land Use and Planning

Under this alternative the 217.7-acre north portion of the project site would be annexed to the City of Brea. Upon annexation, this portion of the project site would be zoned "HR" Hillside Residential, on the eastern side of the project site with a corresponding land use designation of Hillside Residential. The western portion of the project site would be zoned "R-1" Single-Family Residential, with a corresponding land use designation of Low Density Residential. Unlike the proposed project, this alternative would not necessitate any further zoning or land use designation change. This alternative would provide 73 affordable housing units per the City's affordable housing ordinance. This alternative would reduce project-related trips by approximately 26.5 percent, reducing potential impacts to local and regional transportation system, including Caltrans facilities. Therefore, this alternative would better attain the RTP/SCS goal of preserving and ensuring a sustainable regional transportation system than the proposed project, which requires changes in land use designations. This alternative would not conflict with any land use plan, policy, or regulations, and no significant environmental impacts would occur. This alternative would reduce impacts related to land use and planning compared to the proposed project; however, the project's impacts were also less than significant without mitigation.

7.5.12 Mineral Resources

The project site is in an MRZ 1 and MRZ 3. Development under this alternative would result in similar impacts to mineral resources as the proposed project. Similar to the proposed project, development of this alternative would not deplete or modify the availability of a known mineral resources. This alternative would have similar physical environmental impacts to mineral resources compared to the proposed project. Mineral resources is not a significant and unavoidable impact for the proposed project.

7.5.13 Noise

A reduction in building area would decrease the project-related construction noise impacts. This alternative would still be anticipated to implement the identified mitigation measures to ensure that construction-related noise levels are less than significant. However, the construction duration would be shortened, and the related construction noise would be reduced. The reduction in number of units would also decrease residential noise and traffic noise, thus reducing the operational noise impact compared to the proposed project. This alternative

would reduce impacts related to both construction and operational noise. Noise is not a significant and unavoidable impact of the proposed project.

7.5.14 Population and Housing

As shown in Table 7-1 above, the buildout of this alternative would result in 727 dwelling units, which would be expected to generate approximately 2,000 new residents. Compared to the proposed project, this alternative results in 373 fewer dwelling units and 547 fewer residents than the proposed project (a 34 percent decrease for both). In addition, the jobs-to-housing ratio for this alternative would be 2.86 compared to the project's 2.80. Under this alternative, 73 affordable housing units would be constructed. The reduction of housing opportunities compared to the proposed project would worsen the jobs-to-housing ratio. Therefore, this alternative would have greater population and housing impacts compared to the proposed project. Population and housing is not a significant and unavoidable impact of the proposed project.

7.5.15 Public Services

This alternative would reduce the number of units developed on the project site, and therefore would generate less public services demands compared to the proposed project. However, the proposed project would provide special funding to improve fire safety facilities and training, and also provide locations for future fire safety and public safety/civic uses, as stipulated in the Development Agreement. Under this alternative, no additional special public safety facilities and sites would be provided to reduce fire service impacts to a less than significant level. Therefore, this alternative would result in greater fire services impact than the proposed project. Similar to the proposed project, a mitigation measure that requires Crime Prevention Through Environmental Design principles to reduce police services impact, and a mitigation measure to offset its fair share of the costs of providing additional library resources would still be necessary for this alternative. This alternative would decrease impacts related to police, school, and library services, and increase impacts related to fire protection. Public services are not a significant and unavoidable impact of the proposed project.

7.5.16 Recreation

This alternative would reduce the number of units developed on the project site, and therefore would reduce the number of residents at the project site. Similar to the proposed project, this alternative would be required to comply with Brea Municipal Code section 18.64.080, which requires the provision of park and recreational facilities through land dedication, installation of improvements, payment of in-lieu fee thereof, or a combination. Given the reduction of dwelling units and residents, this alternative would generate a reduced park and recreational demand compared to the proposed project. However, the 13-acre sports park with various recreational amenities would not be provided under this alternative. Therefore, this alternative would have similar environmental impacts on recreation as the proposed project. Recreation is not a significant and unavoidable impact of the proposed project.

7.5.17 Transportation

Under this alternative, construction-related traffic would be reduced since there would be a reduction in residential units. This alternative would also reduce operation-related trips, generating 6,863 daily trips instead of 9,337 trips under the proposed project—a reduction of approximately 26.5 percent. Therefore, this alternative would reduce roadway intersection and segment queuing impacts on local and Caltrans facilities. As with the proposed project, with reduced daily trips but within the same traffic analysis zones, this alternative is anticipated to result in a VMT per service population that is less than the City's threshold. Because this alternative would decrease daily and peak hour trips in area roadway systems, this alternative would have less traffic impacts in comparison with the proposed project. However, as with the proposed project, this alternative would be required to contribute its fair share pursuant to the City's AB 1600 Transportation Improvement Nexus Program (Ordinance 996). This alternative would reduce impacts related to transportation compared to the proposed project. Transportation impacts are not a significant and unavoidable impacts of the proposed project.

7.5.18 Tribal Cultural Resources

Due to the lower unit count, grading and earthwork activities would disturb a smaller portion of the project site compared to the proposed project. Due to the earthwork activities, potential impacts still exist to subsurface tribal cultural resources. Similar to the proposed project, this alternative would need a mitigation measure requiring the retention of a qualified Native American monitor during construction. With the smaller development footprint and more open space, this alternative would reduce impacts relating to tribal cultural resources compared to the proposed project. Tribal cultural resources is not a significant and unavoidable impact of the proposed project.

7.5.19 Utilities and Service Systems

This alternative would result in 373 fewer dwelling units than the proposed project. The alternative would generate less wastewater and solid waste and less demand for water, electricity, gas, and telecommunication services compared to the proposed project. Given the smaller number of dwelling units, this alternative would have more pervious surfaces than the proposed project, and is therefore likely to result in reduced stormwater volume. This alternative would reduce overall utilities and service systems demands compared to the proposed project. Utilities and service systems are not a significant and unavoidable impact of the proposed project.

7.5.20 Wildfire

The project site is located within a very high FHSZ for incorporated LRA of the City of Brea and the OCFA's unincorporated LRA. This alternative would place 727 dwelling units on-site instead of 1,100 units. As with the proposed project, development under this alternative would be required to comply with the CFC and the City of Brea's standards for fire protection, including providing fuel modification zones and implementing noncombustible construction and plants and landscaping, consistent with the Brea Hillside Zoning Ordinance and the Brea Fire Department Fuel Modification Guideline. This alternative would provide more opportunities for open space, which could be prone to wildfire risks, compared to more dense development with more

impervious and nonflammable surfaces. Therefore, this alternative would have greater impacts related to wildfire. Wildfire is not a significant and unavoidable impact of the proposed project.

7.5.21 Conclusion

This alternative would lessen environmental impacts for Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, GHG Emissions, Hydrology and Water Quality, Land Use and Planning, Noise, Public Services, Transportation, Tribal Cultural Resources, and Utilities and Service Systems. This alternative would be environmentally neutral for Agriculture and Forestry Resources, Hazards and Hazardous Materials, Mineral Resources, and Recreation. This alternative would worsen environmental impacts for Population and Housing and Wildfire. All mitigation measures identified for the proposed project would still be required. For these reasons, this alternative is considered environmentally superior to the proposed project.

7.6 HIGHER DENSITY DEVELOPMENT ALTERNATIVE

This alternative would increase development density in the 94.5-acre portion of the project site currently designated as Low Density Residential on the west side of Valencia Avenue, preserve 99.6 acres planned for Phase 3 development, and maintain the proposed density in the 68-acre, Phase 1 portion designated as Hillside Residential by the City's General Plan. This alternative would develop Phase 2 area on the west side of Valencia Avenue with 747 units, combining units proposed for Phase 2 (612 units) and Phase 3 (135 units), to increase density to 7.9 dwelling units per acre. The 68-acre, Phase 1 portion of the project site would be developed with 353 units, a density of 5.2 units per acre. Therefore, this alternative would have an overall density of 6.8 dwelling units per acre. It is anticipated that more townhome units and higher density attached units with less building area would be constructed on the west side, and low-density and medium-density units as proposed could be constructed on the east side. This alternative would decrease the overall trips generated by the proposed project due to increase in higher density units. Higher-density residential units have a lower trip generation rate than low density single family units. This alternative would provide the same number of affordable housing units as the proposed project, 76 affordable housing. This alternative would reduce operational air quality and GHG emissions impacts. This alternative would require a general plan amendment, rezoning, and annexation.

7.6.1 Aesthetics

As with the proposed project, the implementation of this alternative would result in a change in the existing visual character of the project site. Under this alternative, greater density and intensity would be placed on the west side of the project site (747 dwelling units), and a reduced density would be placed on the eastern side of the project site (353 dwelling units). To accommodate 747 units on the west side of the project site, the residential units would be largely townhome and multifamily residential. This alternative would increase density on the west side of the project site and maintain density on the east side for the Phase 1 area compared to the proposed project. The Phase 3 area of the project site east of Valencia Avenue would not be developed. The city's visual resources are to the north and east of the project site, including Chino Hills State Park and Carbon Canyon Regional Park. This alternative would preserve the existing hills and natural slopes in the Phase 3 area adjacent to Carbon Canyon Regional Park and protect the view corridors on Rose Drive identified in Figure

5.1-1, *Brea Scenic Resources*. This alternative would result in less environmental impact related to aesthetics. Aesthetic impact is not a significant and unavoidable impact of the proposed project.

7.6.2 Agriculture and Forestry Resources

As with the proposed project, development under this alternative would remove the existing agricultural uses on-site. Impacts of the proposed project on agricultural and forestry resources were found to be less than significant prior to mitigation. This alternative's impact to agriculture and forestry resources would be similar to the proposed project. Agriculture and forestry resources is not a significant and unavoidable impact of the proposed project.

7.6.3 Air Quality

This alternative would result in the same number of dwelling units as the proposed project. Given that this alternative would result in more townhomes and multifamily residential and more cluster development, the cluster development would decrease the amount of grading required. The reduced grading would reduce construction-related air quality impacts compared to the proposed project. During operation, this alternative would generate fewer vehicle trips because there would be more townhomes and multifamily units, and the trip generation rate for a multifamily unit is less than for a single-family unit. Reduced footprints on buildings would likely result in decreased energy use and less area source emissions. This alternative would therefore result in a decrease in short-term construction impacts and long-term operational air quality impacts compared to the proposed project. However, it would not eliminate the significant and unavoidable operational air quality impact. Construction air quality is not a significant and unavoidable impact of the proposed project, but operational air quality is a significant and unavoidable impact of the proposed project.

7.6.4 Biological Resources

The project site contains sensitive wildlife, vegetation, and habitat and jurisdictional waters (drainages). Development under this alternative would increase density on the western side of the project site and decrease density on the eastern side. More lands would be preserved as open space on the eastern side of the project site. The area west of Valencia Avenue is not designated critical habitat for the coastal California gnatcatcher, and the Phase 3 area to be preserved contains jurisdictional waters and various sensitive and special status habitats and species. Therefore, these species would not be impacted. This alternative would reduce biological impacts compared to the proposed project. Biological resources is not a significant and unavoidable impact of the proposed project.

7.6.5 Cultural Resources

Due to the cluster design, this alternative would redevelop and disturb a smaller area of the project site compared to the proposed project. Compared to the proposed project, this alternative would reduce impacts to cultural resources because of the smaller development area. However, similar to the proposed project, a mitigation measure that requires monitoring during certain grading activities would still be necessary. Cultural resources is not a significant and unavoidable impact of the proposed project.

7.6.6 Energy

Under this alternative, the number of residential units would remain the same as the proposed project (1,100 dwelling units). However, with the smaller footprint of the buildings and higher density products, energy uses are anticipated to be less than low-density units. This alternative would result in an overall reduction for energy consumption compared to the proposed project. Energy is not a significant and unavoidable impact of the proposed project.

7.6.7 Geology and Soils

Due to the cluster design, this alternative would redevelop and disturb a smaller portion of the project site compared to the proposed project. The eastern hillside with natural slopes would be preserved as open space. As with the proposed project, new buildings and graded areas would be required to comply with the most recent building and seismic codes and regulations. This alternative would reduce impacts related to geology and soils. Geology and soils is not a significant and unavoidable impact of the proposed project.

This alternative would reduce the area to be graded and excavated, although it would require a similar mitigation measure to reduce potential paleontological resources impacts by requiring monitoring during ground-disturbing activities that occur in deposits that could potentially contain paleontological resources. Because the area of disturbance would be reduced, the potential for discovering and damaging paleontological resources would also be reduced. Paleontological resources is not a significant and unavoidable impact of the proposed project.

7.6.8 Greenhouse Gas Emissions

This alternative would contribute to global climate change through direct emissions of GHG from onsite area sources and vehicle trips generated. Similar to the proposed project, this alternative would result in 1,100 dwelling units. However, more compact development and an increase in townhomes and multifamily residential would decrease building area and lead to slightly decreased emissions during construction. During long-term operation, vehicle trips, VMT, and off-site energy production would also be decreased given the lower trip rates of higher density units. GHG emissions impacts of this alternative be less than the proposed project. However, it would not eliminate the significant and unavoidable GHG emissions impact. GHG emissions impact is a significant and unavoidable impact of the proposed project.

7.6.9 Hazards and Hazardous Materials

The project site has historically contained and currently contains oil production activities and agriculture activities. Under this alternative, hazardous material concerns and remediation programs for the eastern north half of the project site would not be provided as the area would be preserved as is. As a result, impacts related to hazards and hazardous materials would be greater than the proposed project. Hazards and hazardous materials is not a significant and unavoidable impact of the proposed project.

7.6.10 Hydrology and Water Quality

This alternative would redevelop and disturb a smaller portion of the project site and preserve more land as open space. Therefore, the area of soil disturbance would be smaller than the proposed project, and hydrology and water quality impacts during construction would be less than the proposed project. And as with the proposed project, this alternative would be required to be graded in accordance with the NPDES Construction General Permit requirements and incorporate appropriate best management practices. Additionally, full buildout of this alternative would result in more pervious surfaces, since a larger portion of the project site would be maintained as open space. The increase in pervious surfaces would allow more rainwater to percolate into the ground. This alternative would reduce impacts related to hydrology and water quality compared to the proposed project. Nevertheless, similar to the proposed project, this alternative would likely result in housing development in the Carbon Canyon Dam inundation area and would require the preparation and submittal of an emergency response plan to the Brea Fire Services Department. Hydrology and water quality is not a significant and unavoidable impact of the proposed project.

7.6.11 Land Use and Planning

This alternative would require specific plan, rezoning, development agreement, annexation, and affordable housing incentives approvals. Although the same number of units would be constructed under this alternative, more townhomes and higher density units would make up the housing mix, resulting in a reduction in project-related trips compared to the proposed project. Therefore, this alternative would reduce potential impacts to local and regional transportation systems, including Caltrans facilities, and also reduce VMT per population. A reduction in daily trips would also have less impact than the proposed project to the RTP/SCS goal of preserving and ensuring a sustainable regional transportation system. Therefore, this alternative would result in less impacts related to land use and planning as compared to the proposed project. Land use and planning is not a significant and unavoidable impact for the proposed project.

7.6.12 Mineral Resources

The project site is in MRZ 1 and MRZ 3. Development under this alternative would reduce impacts to mineral resources because it would preserve the Phase 3 area (approximately 99.6 acres) in its current condition. Mineral resources is not a significant and unavoidable impact for the proposed project.

7.6.13 Noise

Under this alternative, more high density townhomes and attached housing units would be constructed on the more flat, west side of Valencia Avenue, while preserving natural slopes, hills, and open space on the east side of Valencia Avenue. Therefore, although the overall number of units would not change, a reduction in building area and less site preparation and grading on the east side would decrease the project-related construction noise impacts. This alternative would also result in decreased operational noise due to decreased project-related vehicle trips. The noise associated with the 13-acre sports park would also be eliminated. This alternative would still be anticipated to implement the identified mitigation measures to ensure that construction-related noise levels are less than significant. However, this alternative would result in less construction and operational noise

impacts compared to the proposed project. Noise is not a significant and unavoidable impact of the proposed project.

7.6.14 Population and Housing

This alternative would result in the same number of units as the proposed project, which would generate the same amount of residents and jobs-to-housing ratio. This alternative would also provide affordable housing units. This alternative is environmentally neutral compared to the proposed project. Population and housing is not a significant and unavoidable impact of the proposed project.

7.6.15 Public Services

This alternative would provide the same number of units as the proposed project, and therefore would result in similar impacts related to fire, police, school, and library services. Impacts of the proposed project on fire, police, and school services were found to be less than significant with and without mitigation. This alternative is environmentally neutral compared to the proposed project. Public services are not a significant and unavoidable impact of the proposed project.

7.6.16 Recreation

This alternative would result in the same number of units as the proposed project, which would generate the same number of residents who could demand parks and recreational in the area. This alternative would not provide the 13-acre sports park, and the Phase 3 area would be preserved and not be accessible to the public, as it is currently not accessible. Because this alternative would provide open space that would be inaccessible to the public, this alternative would result in a greater impact compared to the proposed project. Recreation is not a significant and unavoidable impact of the proposed project.

7.6.17 Transportation

Under this alternative, construction-related traffic would be reduced since there would be a reduction in building area and less grading on the hillside, shortening construction duration. This alternative provides for the same number of units as the proposed project but result in fewer daily trips because higher-density attached units have a lower trip generation rate than single-family detached units. Traffic would be distributed differently, according to the distinct traffic patterns unique to the shift in density to the west side of the project site, with the result that impacts would be reduced at some points and increased at others. Although the trips would be slightly reduced, similar roadway improvements would still be required under this alternative. This alternative would also result in less VMT per population This alternative would reduce traffic impacts compared to the proposed project. Transportation impact is not a significant and avoidable impact of the proposed project.

7.6.18 Tribal Cultural Resources

Due to the cluster design, grading and earthwork activities would disturb a smaller portion of the project site compared to the proposed project. Due to the earthwork activities, potential impacts still exist to subsurface tribal cultural resources. Similar to the proposed project, this alternative would need a mitigation measure

requiring the retention of a qualified Native American monitor during construction. With the smaller development footprint and more open space, this alternative would reduce impacts relating to tribal cultural resources compared to the proposed project. Tribal cultural resources is not a significant and unavoidable impact of the proposed project.

7.6.19 Utilities and Service Systems

This alternative would result in the same number of dwelling unit and would be expected to generate the same number of residents as the proposed project. As a result, this alternative would be expected to generate the same demand for water, wastewater treatment, solid waste disposal, electricity, gas, and telecommunication. This alternative is environmentally neutral compared to the proposed project. Utilities and service systems is not a significant and unavoidable impact of the proposed project.

7.6.20 Wildfire

The entire project site is located within a very high FHSZ for Brea's incorporated LRA and OCFA's unincorporated LRA. This alternative would place 780 dwelling units on the west side and 320 units on the east side of the project site. As with the proposed project, development under this alternative would be required to comply with the CFC and the City of Brea's and OCFA's standards for fire protection, including providing fuel modification zones and implementing noncombustible construction and plants and landscaping consistent with the Brea Hillside Zoning Ordinance, OCFA Guideline C-05, and the Brea Fire Department Fuel Modification Guideline. This alternative would provide more opportunities for open space on the east side, which could be prone to wildfire risks, compared to more dense development with more impervious and nonflammable surfaces. Therefore, this alternative would have greater impacts related to wildfire. Wildfire is not a significant and unavoidable impact of the proposed project.

7.6.21 Conclusion

This alternative would lessen environmental impacts for Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, GHG Emissions, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Transportation, and Tribal Cultural Resources. This alternative would be environmentally neutral for Agriculture and Forestry Resources, Population and Housing, Public Services, and Utilities and Service Systems. This alternative would worsen environmental impacts for Hazards and Hazardous Materials, Recreation, and Wildfire. For these reasons, this alternative is considered environmentally superior to the proposed project. However, all mitigation measures identified for the proposed project would still be required, and this alternative would not eliminate the significant and unavoidable operational air quality and GHG emissions impacts.

7.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior

development alternative must be identified. As summarized in Table 7-2, all project alternatives would be environmentally superior to the proposed project.

Table 7-2 Summary of Proposed Project and Alternatives

Topic	Proposed Project	Alternative 1: No Project/Existing County of Orange General Plan Development	Alternative 2: No Project/Existing City of Brea General Plan Development	Alternative 3: Cluster Development
5.1. Aesthetics	LTS	-	-	-
5.2. Agriculture	LTS	=	=	=
5.3. Air Quality				
Short-Term Construction	LTS/MM	-	-	-
Long-Term Operation	SU/MM	-	-	-
5.4. Biological Resources	LTS/MM	-	-	-
5.5. Cultural Resources	LTS/MM	-	-	-
5.6. Energy	LTS	-	-	-
5.7. Geology and Soils	LTS	-	-	-
Paleontology	LTS/MM	-	-	-
5.8. Greenhouse Gas Emissions	SU/MM	-	-	-
5.9. Hazards and Hazardous Materials	LTS/MM	=	=	+
5.10. Hydrology and Water Quality	LTS/MM	-	-	-
5.11 Land Use and Planning	LTS	-	-	-
5.12 Mineral Resources	LTS	=	=	-
5.13 Noise				
Short-Term Construction	LTS/MM	-	-	-
Long-Term Operation	LTS	-	-	-
5.14 Population and Housing	LTS	+	+	=
5.15 Public Services	LTS/MM	-	-	=
5.16 Recreation	LTS	=	=	+
5.17 Transportation	LTS	-	-	-
5.18 Tribal Cultural Resources	LTS/MM	-	-	-
5.19 Utilities and Service Systems	LTS/MM	-	-	=
5.20 Wildfire	LTS/MM	+	+	+

Notes: NI: No impact; LTS: Less than Significant; LTS/MM: Less than Significant with Mitigation Incorporated; SU: Significant and Unavoidable

(-) The alternative would result in less of an impact than the proposed project.
(+) The alternative would result in more of an impact than the proposed project.
(=) The alternative would result in the same or similar impact as the proposed project.

Table 7-3 identifies the ability of the proposed project and each alternative to achieve project objectives.

Table 7-3 Ability of Each Alternative to Meet the Project Objectives

Objective	Proposed Project	Alternative 1: No Project/Existing County of Orange General Plan Development	Alternative 2: No Project/Existing City of Brea General Plan Development	Alternative 3: Higher Density Development
1. Organize the land plan to facilitate the provision of proposed land uses and amenities.	YES	Partially	Partially	Partially
2. Integrate a comprehensive walking and biking trail system that provides physical and visual connections to enhance walkability, linking neighborhoods to key amenities and open space areas within Brea 265 and to the existing trails in the greater Brea community, including Brea Sports Park, Carbon Canyon Regional Park, and Chino Hills State Park.	YES	Partially	Partially	NO
3. Enhance public benefits by incorporating a variety of parks, paseos, parkways, and open space features that meet the recreational needs of the residents, enhance pedestrian orientation, and contribute to community aesthetics.	YES	NO	NO	NO
4. Provide a housing mix ranging from conventional single-family homes and detached cluster homes to townhomes and apartments, including workforce and affordable housing units.	YES	NO	NO	Partially
5. Incorporate development standards specifically crafted for the latest residential design concepts and neighborhood designs that are popular with homebuyers.	YES	NO	NO	Partially
6. Provide flexibility in plan implementation to allow for changes in future market conditions.	YES	NO	NO	NO
7. Use the Specific Plan as a tool to implement the City's affordable housing requirements and the State's Density Bonus Law.	YES	NO	Partially	YES
8. Establish a distinctive community character through place-making elements that embrace and respect the site's oil industry history and special physical attributes.	YES	NO	NO	Partially
9. Incorporate sustainable design and development approaches, including walkable communities, water quality features, and water- and energy-efficient landscape and building design. Encourage the use of sustainable building materials, where feasible.	YES	Partially	Partially	Partially

7. Alternatives to the Proposed Project

Table 7-3 Ability of Each Alternative to Meet the Project Objectives

Objective	Proposed Project	Alternative 1: No Project/Existing County of Orange General Plan Development	Alternative 2: No Project/Existing City of Brea General Plan Development	Alternative 3: Higher Density Development
10. Ensure appropriate phasing and financing for community facilities, including circulation and streetscape improvements; water, sewer, and drainage facilities; and parks and recreational facilities.	YES	Partially	Partially	Partially
11. Provide the fire management plan to reduce the threat of wildfire and create a fire-resistant buffer between homes and the adjacent open space areas of Carbon Canyon Regional Park.	YES	NO	NO	NO

"Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (CEQA Guidelines § 15126.6[c]). Both of the No Project alternatives would reduce many of the environmental impacts identified under the proposed project, but would not be able to eliminate significant and unavoidable impacts related to GHG emissions and operational air quality. And they would only provide single-family detached units and eliminate the opportunity to provide a housing mix with a density of 1 to 12 dwelling units per acre, with flexibility in implementation. Both No Project alternatives would only partially meet the project objectives. The City of Brea is a job-rich community with imbalanced jobs-housing ratio and does not meet the regional housing attainment goal for low-income units. The Higher Density Development Alternative would reduce many of the environmental impacts but would not be able to eliminate significant and unavoidable impacts related to GHG emissions and operational air quality. It would also have greater impacts related to hazards and hazardous materials, recreation, and wildfire. This alternative would only partially meet most of the project objectives. Although all project alternatives have been identified as environmentally superior to the proposed project, they would not eliminate the significant and unavoidable GHG and air quality impacts, and the same mitigation measures as the proposed project would need to be incorporated.

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.

As described in the Notice of Preparation (NOP) prepared for the proposed project and circulated from December 14, 2018, to January 23, 2019, all impact categories were found to have at least one potentially significant impact; therefore, all categories have been evaluated in the EIR.

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 will result in the phased development of a master planned community of residential neighborhoods, parks, recreational amenities, and open spaces, linked together by an extensive trail network. At buildout, the proposed project would provide up to 450 low-density units and 650 medium-density units—a total of 1,100 units with an overall average density of 4.2 dwelling units per acre. The proposed project also provides up to 15.1 acres of parks/recreations uses, 47.5 acres of open space, and 2.0 acres of rights-of-way. The development of such uses, in accordance with federal, state and local regulations, will include the removal of an extensive network of oilfield pipelines and facilities, and the remediation of oil-impacted soils. Existing agricultural uses would also be removed.

Implementation of the project would allow 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, and water. An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, sewer, water, solid waste, electrical power, and natural gas services) would also be required.

The energy and social service commitments would be long-term obligations in view of low likelihood of returning the land to its original condition once it has been developed. Project development is a long-term irreversible commitment of the land. After the 50- to 75-year structural lifespan of the buildings is reached, it is improbable that the site would revert to its current oil production and agricultural uses due to the large capital investment that would already have been committed.

An increase in project related vehicle trips would accompany project related population growth. Over the long term, emissions associated with such vehicle trips and energy use associated with proposed development would generate greenhouse gas (GHG) emissions and VOC emissions exceeding the South Coast Air Quality Management District's significance thresholds and continue to contribute in the South Coast Air Basin's nonattainment designation for ozone. Furthermore, project related grading and construction would result in a permanent change in landform and scenic resources. Given the low likelihood that the land would revert to oil and agricultural production, the project would generally commit future generations to these environmental changes.

9. Significant Irreversible Changes Due to the Proposed Project

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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. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. 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?

The proposed project is surrounded by urban development on all sides except for a portion of the eastern boundary shared with Carbon Canyon Regional Park and the Carbon Canyon Dam. Therefore, extensions of existing utility facilities from surrounding development would provide a sufficient tie-in to the existing utility systems to accommodate the demands of this project at full buildout.

The proposed project consists of a General Plan Amendment and Zone Change to allow for development of up to 450 low-density units and 650 medium-density units—a total of 1,100 units with an overall average

density of 4.2 dwelling units per acre, and up to 15.1 acres of parks/recreations uses, 47.5 acres of open space, and 2.0 acres of rights-of-way. The current development intensity allowable under the existing general plan is currently limiting growth on the site. The proposed increase in development intensities via Specific Plan adoption and amendments to existing general plan and zoning would, therefore, be growth-inducing with respect to removal of obstacles to growth within the project site.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

As discussed in Section 5.15, the proposed project would necessitate the expansion of the public services facilities in order to maintain desired levels of service. The required payment of standard and special fees and provision of potential public safety/civic uses and fire safety locations would support future procurement and/or expansion of fire, police, school, and library services, and the proposed project would, therefore, have significant growth-inducing consequences with respect to public services.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

During project construction, a number of design, engineering, and construction-related jobs would be created. This would be a temporary situation, lasting until project construction is completed. This would be a direct, growth-inducing effect of the proposed project. As new homes are developed and occupied, residents would seek shopping, entertainment, employment, home improvement, auto maintenance, and other economic opportunities in the surrounding area. This would represent an increased demand for such economic goods and services and could, therefore, encourage the creation of new businesses and/or the expansion of existing businesses that address these economic needs. The impacts from this effect would be analyzed and any appropriate mitigation imposed on a project-by-project basis.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

As discussed in Section 5.11, the proposed project requires a change to existing land use and zoning designations to "Brea 265 Specific Plan." The proposed project would increase residential dwelling units in the city by 1,100 units compared to 615 units allowed under the County's current land use designations. No changes to City's building safety standards (i.e., building, grading, plumbing, mechanical, electrical, fire codes) are proposed or required to implement this project. The proposed conditions of approval, project design features, provisions from the Development Agreement, and/or mitigation measures have been identified in the preceding Sections 5.1 to 5.20 to ensure that subsequent subdivision maps and site-specific development projects comply with all applicable local, regional, and state plans, policies, ordinances, etc. This would ensure that there are no conflicts with adopted land development regulations and that environmental impacts are minimized as this project is completed over the next several years.

10. Growth-Inducing Impacts of the Proposed Project

Pressures to develop other land in the surrounding area would derive from regional economic conditions and market demands for housing, commercial, and industrial land uses that are not directly or indirectly influenced by zoning actions on a particular property. Approval of the proposed project would not, therefore, involve a precedent-setting action that could be applied to other properties and thereby encourage or facilitate growth that would not otherwise occur.

10. Growth-Inducing Impacts of the Proposed Project

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11. Organizations and Persons Consulted

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City of Brea Police Department

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NATIVE AMERICAN TRIBES

Gabrieleno Band of Mission Indians – Kizh Nation

11. Organizations and Persons Consulted

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